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HIGH SCHOOL AND UNIVERSITY MATRICULATION EXAMINATIONS BOARD

DEPARTMENTAL EXAMINATIONS, 1940

SOCIAL STUDIES 3

Time—3 hours.

Note—**Candidates should read the following directions carefully: Answer PART A; ALL questions of PART B; and ANY FIVE questions of PART C.**

The passing mark is not necessarily fifty per cent of the total score of the paper.

Question 2 should be answered on the accompanying outline map which should be returned with your answer paper.

PART A

Values

(To be answered by all Candidates)

25 **1.** Write an essay of about *five hundred* words on *one* of the following subjects:

(*a*) The Role of Canada in Anglo-American Relations.
(*b*) Factors which foster or obstruct Canadian national unity.
(*c*) Provision and Support of Social Services in Alberta.
(*d*) The Co-operative Movement in the Scandinavian Countries.

PART B

(To be answered by all Candidates)

2.

On the accompanying map of Europe and adjacent areas in 1914

8 (*a*) Draw (using a broken line) the boundaries of the following states after the signing of the Peace Treaties: Poland; Germany; Rumania; Czechoslovakia; Yugoslavia; Austria; Soviet Union; Hungary.

1 (*b*) Draw (using a dotted line) the boundaries of Greater Germany in December, 1939.

8 (*c*) Indicate approximately the position of the following: Sudetenland (mark "Su"); Danzig (mark "Dz"); Munich (mark "Mu"); Ankara (mark "Ak"); Tunisia (mark "Tu"); Passchendaele (mark "Ps"); Murmansk (mark "Mm"); Karelian Isthmus (mark "Ki"); Eire; Heligoland (mark "Hd"); Scapa Flow (mark "Sf"); Bessarabia (mark "Ba"); Geneva (mark "Ga"); Sylt; Tallinn (mark "Tn"); Dardanelles (mark "Ds").

8 **3.** What are—
The Holy See; anti-Semitism; Monroe Doctrine; the "Open Door" policy in China; most-favoured-nation treaty; economic sanctions; the "Comintern"; mandates?

6 **4.** (*a*) Select *six* of the following treaties. For each treaty selected, give the names of the governments signing it.

Lausanne
Washington Five-Power Treaty
Neuilly
Locarno
Trianon
Versailles
The Concordat of 1929
St. Germain
Brest-Litovsk
Riga
Rapallo

Values

8 (*b*) Each of the following terms belonged to one of the treaties named in (*a*). For each of these terms, write the name of the treaty of which it was a part.

(1) Russia evacuated Finland, Latvia, Esthonia and the Aaland Islands.
(2) Alsace-Lorraine was ceded to France.
(3) The signatory powers guaranteed the Belgo-German and Franco-German frontiers and agreed to the demilitarization of the Rhineland.
(4) South Tyrol, Trent, Trieste were ceded to Italy.
(5) Slovakia became part of the new republic of Czechoslovakia.
(6) A large tract of White Russia was included within the boundaries of Poland.
(7) The union of Austria and Germany was expressly forbidden.
(8) Greece was awarded western Thrace and Bulgaria lost her Aegean coast-line.

9 **5.** Two lists are given below: one, containing the names of leading personalities; the other containing descriptions. Copy the letter that corresponds to each name and write after it the appropriate description. For example, Count Ciano is Italian Foreign Minister; hence, write "(*a*) Italian Foreign Minister".

Leading Personalities	*Description*
(*a*) Count Ciano (example)	1. First Secretary-General of League of Nations.
(*b*) Sir Eric Drummond	2. Commander of Canadian Forces in 1918.
(*c*) Sir Arthur Currie	3. Generalissimo of the Chinese National Army.
(*d*) General Cardenas	4. President of the Dail and Premier of Eire.
(*e*) Thomas Masaryk	5. Canada's Prime Minister during First Great War.
(*f*) Stresemann	6. Canadian Minister of Justice.
(*g*) Hindenburg	7. President of the Republic of Mexico.
(*h*) Maurice Gamelin	8. German Economic Adviser.
(*i*) Eamon de Valera	9. Leading Italian Newspaper Editor.
(*j*) Leon Trotsky	10. Russian revolutionary leader now exiled in Mexico.
(*k*) Admiral Horthy	11. President of former Czechoslovak republic.
(*l*) Virginio Gayda	12. Regent of Hungary.
(*m*) Sir Robert Borden	13. Foreign Minister of Germany (1923-29).
(*n*) Chiang Kai-Shek	14. German Military leader and chancellor.
(*o*) Ernest Lapointe	15. French political leader, former premier and foreign minister.
(*p*) Dr. Hjalmar Schacht	16. Italian Foreign Minister (example).
(*q*) Viscount Halifax	17. Present British Foreign Secretary.
(*r*) Adelard Godbout	18. Premier of Quebec Province.
(*s*) Edouard Herriot	19. Commander-in-Chief of Allied Land Forces.

PART C

NOTE—Answer any FIVE questions.

5 **6.** (*a*) Mention *five* of President Wilson's Fourteen Points.

3 (*b*) Name *three* disputes in which the intervention of the League of Nations may be said to have averted open warfare.

4 (*c*) Offer *two* reasons for the apparent failure of the League to halt: (1) the Japanese invasion of Manchuria; and (2) the Italian occupation of Abyssinia.

12 **7.** In what various ways, since 1919, has France in her foreign policy sought to achieve national security?

12 **8.** Account for the failure of the German Republic of 1919-1933.

Values

12 **9.** Why has Italy been one of the discontented and "revisionist" powers since 1919?

10. Describe briefly—

4 (*a*) the main industries of the Canadian (Pre-Cambrian) Shield;

4 (*b*) the work of the Wheat Pools in Western Canada;

4 (*c*) problems arising out of the land settlement policies in the Prairie Provinces.

11. Discuss the attitude of the United States since 1919 to—

6 (*a*) The League of Nations;

6 (*b*) the Sino-Japanese conflict in the Far East.

6 **12.** (*a*) What weaknesses are attributed to democratic government by critics in the totalitarian states?

6 (*b*) Make a statement of the merits of democratic government in answer to the arguments of these critics.

12 **13.** (*a*) "The precarious world situation is making the members of the British Commonwealth more aware of their interdependence. The Dominions, which have already gained legislative independence, are coming to rely on the imperial fellowship in a world which can guarantee them neither political nor economic security. For a large proportion of the citizens of the Dominions, moreover, the imperial association is no longer regarded by them as a limitation of their political pride or national self-respect. Their culture, ideals, and political traditions assume larger stature and significance for them because they are shared with the Commonwealth." Adapted from Page 115, *British Empire Commonwealth* (Trotter).

(*b*) "There is ample room in this Commonwealth for many varieties of democracy. We do not know what the future will bring. All we can safely say is that neither we nor our children are likely to accept, just as our fathers refused to accept, any system of government which subordinates the individual to the state." Adapted from Page 238, *The British Commonwealth and the Future* (edited by Hodson).

(c) "During the period when the Dominions were developing into autonomous states it was natural to think of them as a group and of the central problem of the Commonwealth as that of adjusting the constitutional relations of the Dominions with Great Britain. It was also natural to discuss that problem in terms of the formal and historic unity of the Commonwealth, with the result that possibly undue emphasis came to be laid on the centrifugal character of recent developments. The problem now is to attain the maximum of mutually advantageous co-operation among the various equal nations of the Commonwealth." Adapted from Page 7, *The British Commonwealth and the Future* (edited by Hodson).

(*d*) "What the British Commonwealth is searching for now is a new definition of its own purpose, which will be valid for its nationally autonomous members under modern world conditions."

State in your own words the ideas of the *four* foregoing extracts.

Europe
1914

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THE UNIVERSITY OF ALBERTA

AN ANALYSIS OF THE SOCIAL STUDIES 3 EXAMINATION PAPER OF JUNE, 1940.

A DISSERTATION
SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF ARTS

COLLEGE OF EDUCATION

BY
JOHN BURKE

EDMONTON, ALBERTA
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1941
#3

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CHAPTER I.

THE IMPORTANCE OF MEASUREMENT IN EDUCATION.

Long before education had become the formalized and bookish procedure that we of today so often delight to spell with a capital letter, there was a very definite attempt to measure the achievement of youth in a few selected fields of endeavour. This attempt at measurement was always, indeed, harshly effective, and, in a crude way, quite efficient.

The youth of ancient Persia was called upon to pass a severe test of his skill in the use of rein and bow before he was deemed worthy of a place upon the field of battle. For the youth of ancient Sparta life was almost one continuous test up to that great day the ephors declared him worthy to be enrolled among the defenders of the City. And who shall say what tests of skill and courage were taken and "passed" by that unknown Roman who carried the banner of the Tenth Legion to the shores of Britain? Indeed, our own young Indian of the plains must perforce demonstrate to his chief his ability in the various skills necessary to the well-being of the tribe before he was awarded the status of manhood.

Always, then, some attempt at measurement has accompanied the process of education, whether that education was the mere acquisition of a manual skill, or the more refined process of mental development. In our own day the youthful "Did you pass?" has become the most meaningful idiom of the language. Small wonder, too, for upon the answer to this question depends, in turn, so many of the answers to youth's problems that society has set aside for each of us a good round decade to find the all-important answer to it.

Today that answer seems to be more important than ever. Forms and more forms--forms from the army, forms from the air force, forms from the navy--daily find their way to the teacher's desk via war-conscious youth, and always on every form is a special place reserved for the answer to that all-important question. That answer, indeed, we knew to be important a generation ago when youth was on the march. How much more important it is today when youth is on the wing?

Though education of every sort has always implied some attempt to test the results of achievement it is only in our own generation that it has occurred to educators that perhaps the test itself would be the better for a little testing. Herbart, a century ago, intimated that

testing should be an integral part of the educative process, but by and large even the "greats" in the history of education were too busy proving the need for education and its possibilities to bother much about measuring its results.

Only after the advent of compulsory education did the need of standardized measurement become apparent. About the first decade of this century the democratic taxpayer--that unsung hero of progress without end--began to feel that if he had to pay for education he should be able to find out how much of it he was getting for his money. Not yet had he begun to worry about what sort of education. That was a business for the schoolmaster to worry about. At any rate it was not until as late as the year 1907 that we find educators[1] placing some special emphasis upon testing programs. The new idea followed the rugged road of all new ideas (but faster than in Galileo's time)and immediately subsequent attempts in the same direction met such stiff opposition from the powers that be that the whole movement was threatened with extinction. Then came the war. American army officials caught

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[1] E.L.Thorndike."The Elimination of Pupils from School." A report prepared for the United States Bureau of Education.

on to the idea that certain skills and qualities were better tested in a recruiting office than in a trench of No Man's Land. One might almost say that once the "measurement idea" had won the favourable notice of the American army the whole movement was due for a fair trial.

Indeed there are those who claim that the "measurement movement" in recent years has been over-tried: that too much was expected of it in the first place; that it overemphasizes certain non-essentials of education to the very great detriment of certain fundamental values; and that educational achievement is of its very nature incapable of mathematical description. The writer has on more than one occasion heard famous educationists refer to "the measurement people" in a tone that would do justice to Hitler in referring to the Jews.

These criticisms may have some validity. At the same time a few basic propositions may be set down for our guidance, which, because of their almost universal acceptance may be regarded as axioms. They are these:

1. That if there be such a thing as educational achievement it must exist in some measureable amount.

2. That it is the business of the educator to measure it.

3. That the measure used by the educator should itself be submitted to analysis with a view to its continual improvement, and;

4. That measurement in education should conform in general to the objectives of education as a whole and specifically to those of the school subject being measured.[1]

In our own province in the last few years there has been great activity in the field of education. Courses have been revised, new objectives emphasized, course-content has been broadened to meet the needs of the non-academic student. In all this welter of activity no subject has been subjected to more reform than our History course. It has been disected, relabelled, and revised in turn, till from the cocoon of "History" there has emerged full-blown the new Social Studies--worm, butterfly, and beast--or at least the "bete noir" of scores of teachers from Whisky Gap to Grande Prairie. Indeed, "What are you doing in Social Studies?" would serve as a highly reliable password to any teachers' meeting, if password were needed.

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[1]Tests and Measurements, Smith & Wright, p.6.

We may safely assume that as long as formal courses are taught in our secondary schools, testing will continue to be a matter of prime importance to all who are concerned with our educational program.

The investigation which follows is an attempt to evaluate the efficiency of the Social Studies 3 paper of 1940 as a measuring device. It was felt that in view of the fact that this was the first examination set by the Department of Education on the new course in the Social Studies of Grade XII any number of interesting and useful facts might be revealed by such a study. It was hoped, too, that if the study were adequately prepared some useful suggestions for improvement might possibly result.

CHAPTER II

PRELIMINARY STEPS

Permission was obtained from the Department of Education to go over the records of the students who had written the Social Studies 3 examination in June of 1940. At the suggestion of Miss Grant, head of the Examinations Branch, it was decided to select a number of schools that it was hoped would prove fairly representative of all the schools of the Province. Thirty one schools were selected, as follows:

<u>Large City Public Schools</u>

Edmonton	-	2
Calgary	-	2

<u>City Separate Schools</u>

Edmonton	-	2
Calgary	-	2

<u>Smaller Towns (1500-3000)</u>

Northern Alberta	2
Southern Alberta	2

One Lutheran school was chosen. The smaller towns (1500-3000) were chosen to represent districts where one teacher teaches Social Studies and perhaps two or three other subjects.

The remainder of the cases were chosen from small schools scattered throughout the Province. In these schools Social Studies 3 is taught by a teacher who teaches about one-half the courses offered, or by a teacher who carries the whole teaching load alone.

From each of the large city schools, both public and separate, twenty five cases were chosen. From the smaller towns from ten to fifteen cases were chosen. From the one-teacher schools five cases were chosen, or as nearly five as the total number of candidates for that school allowed.

In the case of the large city schools every fourth paper was chosen. In the towns every second paper was chosen. In the case of the smaller schools, of course, the five cases took every paper. The sampling, too, was conditioned by two other circumstanches that I shall mention. My data on each student include the following:

1. Social Studies mark in Grade IX.
2. Recommended Social Studies mark in Grade X.
3. Recommended Social Studies Mark in Grade XI.
4. Social Studies Raw Score in Grade XII.
5. English Score on Social Studies Paper in Grade XII.
6. Transmuted score in Social Studies of Grade XII.
7. Net Score in Social Studies of Grade XII.
8. I.Q.
9. The category of each student.

In 1940 a large number of students were finishing up under the old course. For these students the data I wished to have were not available. These 'Old Course' students were not graded into the categories A, B and C, and for the most part their records contained no recommended marks in the Social Studies.

The other circumstance affecting my sampling was that as it was hoped some useful information might be gathered from a consideration of each of the three categories in their respective groups it was necessary to control my selection so that some reasonable number from each of these three groups might be chosen. Especially was this so in the case of the C's where strict control was necessary to find the thirty-six cases recorded.

It was felt that the schools chosen for this study offered a fairly representative sampling of the Social Studies results throughout the whole Province. At least I believe that the schools chosen represent every <u>type</u> of school we have in the Province.

The Social Studies 3 examination of June, 1940, was written by 4312 students. From these and by the

method I have indicated, 315 cases, or 7.3 per cent of the whole were chosen. The result was 175 A's, 94 B's, and 36 C's. I have assumed here that the reader is familiar with the Alberta system of grading students in categories on leaving the Intermediate School, but some further information may not be amiss. On leaving the Intermediate School (Grade IX), the Department of Education places each student into one of these three categories, "A", "B", or "C". An "A" student is awarded unconditional promotion and is free to plan his High School course as he sees fit, subject, of course, to the restrictions of the official regulations. The "B" student is awarded a conditional promotion and in his first year of High School is restricted in his choice of academic subjects. The "C" student is still further restricted, and is advised to take as many of the non-academic options as the regulations allow.

The data having been thus selected, the next problem was to fix upon a technique that would prove adequate for analyzing the test results of the 315 cases. Techniques suitable for handling data represented by Grade IX, X and XI examination scores were, of course, readily available. They are known to all

students of modern texts on the science of education. Any number of techniques were available for original investigations that involve control groups, alternative forms of the same test, and the various procedures of standardization. To find a technique for analyzing the individual items of the test paper involved a more difficult search. In this case the nature of the investigation limited me to the restricted data at hand. There was no possibility of securing a control group for the purpose of checking either the validity or reliability of the paper. None of the usual procedures for test analysis would apply where the data were complete before the investigation was begun.

A further obstacle to the use of the better known procedures for test analyses was the fact that all such techniques so far developed were designed for the analysis of objective tests. This test in Social Studies 3 is, in the main, of the essay type, and all efforts at adaptation of the suggested procedures proved futile.

It was finally decided that the test-analysis used by Dr. Wesley in "Teaching the Social Studies" could be modified and adapted to the purposes of this study. It works as follows:

1. It is based on the assumption that the purpose of a test is to separate those who know from those who do not know.

2. When we discover how well or how poorly any test item performs this funcation we have "a measure of its goodness."

For instance, suppose that from the test we are considering we selett item 5b,(Who is Sir Eric Drummond?). Our 315 cases will be divided into three groups, Best, Middle, and Poorest. To make this division we place the answer papers in order of their raw score beginning with the highest score and descending to the lowest score made on the test. Then we count down until we have one-third of the total number, or 105 answer papers. This is the "Best Third" of our 315 cases. The next 105 papers are the "Middle Third," and the lowest 105 cases are the "Poorest Third." When we have compiled the scores made on item 5b we can set down our tabulation as follows:

Item	Number Correct			Percentage Correct[1]			Index of Discrimination
	Best	Middle	Poorest	Best	Middle	Poorest	
5b	67	53	22	64%	50%	21%	43

[1] 105 cases in each group.

The difference between the percentage correct in the "Best" group and the percentage correct in the "Poorest" group gives us the index of discrimination and tells how efficiently the item functioned to discriminate between those students who know their Social Studies 3 course and those who do not. Dr. Wesley's chapter on test analysis from the book I have quoted above would describe this as "a fairly good item."

Item 5j on our Social Studies 3 paper (Who is Chiang Kai Chek?), was answered as follows:

Item	Best	Middle	Poorest	I.D.
5j	74 %	88 %	91 %	-17

This item was known better by the "Poorest" third than by the "Best" third, and so in no way serves to mark off the "sheep" from the "goats." Since it does not serve the purpose a test item is supposed to serve it may be described as a useless item.

CHAPTER III.

THE INDEX OF DISCRIMINATION.

Before submitting to the reader the tables which follow, viz., Table 1 and Table 1(a), some further explanation may prove useful. I have suggested in Chapter II that the procedure followed in arriving at the index of discrimination was originally devised for the analysis of objective test items. To adapt it to my purpose it was assumed that our essay type questions, for the purposes of marking, are broken up into a definite number of "points." In fact I may say that my own experience as a "marker" may be recalled as authority for the claim that this assumption is correct. A "marker" scoring a question worth twelve marks will, in a certain type of question look for twelve points, worth one each, or he may look for six points and award each one two marks, or four points and give each one three marks, and so on.

My modification, then, is that I have assumed each such "point" to be an objective item. The number of marks given such a "point" in no way invalidates the relative percentage scores, or the index of discrimination based upon them.

I may further explain that the significant table here is number 1(a). Space demands that it be given a separate page. Table 1 is not essential to an understanding of Table 1(a), bit it was thought best to include it in order to show how the percentages in Table 1(a) were derived. It is read as follows:

Item 1(a) was answered by 28 students from the "Best Third." They made 448 marks (collective.) Highest possible collective marks: 700. The percentage correct is 448/700, or, as we find on item 1(a) of Table 1(A), 64 per cent. In the "Middle Third" this item was answered by 34 students. The collective mark it actually earned is 396. The highest possible collective mark is 750. Turning to Table IA we find the corresponding percentage to be 55 per cent. By the same reading the "Poorest Third" has a percentage score of 38 per cent. The difference between 64 (percentage score of "Best") and 38 (percentage score of "Poorest") gives us 26, our index of discrimination.

The data of the "Middle Third" prove helpful in estimating the efficiency of certain items as may be seen from items 5(i) and 5(j), as also in item 1(d) in Table IA. The data in this group are not necessary in arriving at the index of discrimination.

Table 1[1]

INDEX OF DISCRIMINATION OF EACH TEST ITEM

	Best Third			Middle Third			Poorest Third.		
Item	No. Answered	Coll.[2] Mark	Possible Marks	No. Answered	Coll. Mark	Possible Marks	No. Answered.	Coll. Mark	Possible Marks
Ia	28	448	700	34	396	750	31	295	776
b	29	498	725	34	435	800	27	287	675
c	1	15	25	5	56	125	8	64	200
d	48	628	1200	33	475	825	40	423	1000
IIa	105	441	840	105	308	840	105	165	840
b	105	71	105	105	46	105	105	32	105
c	105	452	840	105	345	840	106	230	848
IIIa	105	44	105	105	26	105	106	21	106
b	105	89	105	105	59	105	106	46	106
c	105	93	105	105	69	105	106	54	106
d	105	85	105	105	69	105	106	50	106
e	105	44	105	105	21	105	106	12	106
f	105	97	105	105	83	105	106	56	106
g	105	51	105	105	15	105	106	5	106
h	105	79	105	105	69	105	106	59	106
IVa	105	502	630	105	410	630	106	290	656
b	105	465	840	105	361	840	106	276	848
Va				-	Sample	-			
b	105	67	105	105	53	105	106	22	106
c	105	74	105	105	54	105	106	43	106
d	105	84	105	105	51	105	106	40	106
e	105	67	105	105	47	105	106	36	106
f	105	78	105	105	64	105	106	45	106
g	105	95	105	105	78	105	106	70	106
h	105	85	105	105	89	105	106	83	106
i	105	81	105	105	89	105	106	83	106
j	105	78	105	105	92	105	106	96	106
k	105	62	105	105	55	105	106	17	106
l	105	86	105	105	65	105	106	53	106

[1] The reader is reminded that this Table is included merely to show the source of the data in Table 1A. It is not essential to an understanding of the data in Table 1A, nor to the conclusions drawn therefrom.

[2] Coll: Collective mark.

Table 1 (Continued)

	Best Third			Middle Third			Poorest Third		
Item	No. Answered	Coll. Mark	Possible Marks	No. Answered	Coll. Mark	Possible Marks	No. Answered	Coll. Mark	Possible Marks
Vm	105	92	105	105	85	105	106	81	106
n	105	86	105	105	92	105	106	104	106
o	105	60	105	105	48	105	106	33	106
p	105	81	105	105	60	105	106	42	106
q	105	78	105	105	84	105	106	83	106
r	105	49	105	105	35	105	106	32	106
s	105	68	105	105	50	105	106	38	106
VIa	70	248	350	65	176	325	65	131	325
b	70	102	210	65	55	195	65	37	195
c	70	217	280	65	176	260	65	125	260
VII	57	421	684	41	260	492	38	136	456
VIII	81	685	972	73	438	876	82	387	984
IX	82	658	984	85	488	1026	80	348	960
Xa	28	84	112	29	67	116	39	79	156
b	28	63	112	29	55	116	39	51	156
c	28	55	112	29	42	116	39	28	156
XIa	70	289	420	79	264	474	66	72	396
b	70	251	420	79	206	474	66	110	396
XIIa	75	322	450	67	234	402	57	172	342
b	75	335	450	67	252	402	57	167	342
XIII	56	472	672	60	466	720	59	363	767

Table 1A.

INDEX OF DISCRIMINATION OF EACH TEST ITEM.

Item	Percentage Correct Best	Middle	Poorest	Index of Discrimination
Ia	64%	53%	38%	26
b	69%	54	43	26
c	60	45	32	28
d	52	57	42	10
IIa	53	37	20	33
b	68	44	35	33
c	54	41	27	27
IIIa	42	24	20	22
b	85	56	43	42
c	89	66	51	38
d	81	66	47	34
ee	42	20	11	31
f	93	79	53	40
g	30	14	5	25
h	75	66	37	38
IVa	80	65	45	45
b	55	43	32	23
Va		- Sample -		
b	64	50	21	43
c	70	51	40	30
d	80	49	38	42
e	64	45	34	30
f	74	61	42	32
g	90	74	66	24
h	81	58	43	38
i	77	85	80	-3
j	74	88	91	-17
k	60	33	16	44
l	82	62	50	30

Table 1A (Continued)

Item	Percentage Correct Best	Middle	Poorest	Index of Discrimination
Vm	90%	80%	80%	10
n	81	90	98	-17
o	60	46	31	29
p	77	60	40	37
q	74	80	80	-6
r	47	34	30	17
s	65	50	37	28
VIa	71	54	40	31
b	49	30	20	29
c	74	64	48	26
VII	62	53	30	32
VIII	71	50	39	32
IX	66	44	36	30
Xa	75	60	50	25
b	56	47	32	24
c	50	36	18	32
XIa	71	56	19	52
b	60	43	30	30
XIIa	73	58	50	23
b	74	62	49	25
XIII	70	65	47	23

Discriminating Powers of Each Item

From my study of the data contained in the two tables immediately preceding, a number of facts emerge. These facts I should like to call to your attention: On item 1(c) it is worthy of note that as we go from "Poorest" to "Best" fewer candidates attempt this option. I can find no part of the course where the material that item 1(c) tests could be incorporated.

Despite the preponderance of "A"'s in my sampling, no "A" has attempted this option. The marks made by those who did try it were very low. It is probable that the average and better students would rule out item 1(c) on account of the fact that the other options of this question were taken directly from the course and so could be trusted to yield higher score dividends. All in all, this appears to be a useless item.

Item I(d) gave a better score to the "Middle" group than it did to the "Best" group, and in addition to this it has a very low index of discrimination. This item covers one complete sub-topic of the course. In all probability it was presented on the answer paper in somewhat the same form as in class. For this reason it is suggested that the higher mark of the "Middle" group may be the result of "cramming."

It may be noted from the table, too, that about one-half the candidates of the smaller schools prefer this option. In the case of the larger schools it shares its popularity almost equally with I(a).

Question No. 2 distinguished between the "Poorest" and "Best" better than any of the options on Question I, but only slightly so. It represents a testing of knowledge that is picked up incidentally and one might expect it to be picked up by the B's and C's to as great an extent as by the A's, but here, as in most other aspects of the test, the A's are superior.

The eight items of Question III varied from 22 to 40 (Index of Discrimination.) The best known item was "Monroe Doctrine," the poorest "Holy See." In this question the word "Comintern" appears at the end of a line, and the next line begins with "Mandates." Despite the fact that the relative position of these words, and the intervening punctuation should serve adequately to separate them in the reader's mind, about 22 percent of the candidates evidently read "Comintern mandates" and thus lost the marks on at least one of the items. This slip,

made by almost one-quarter of the candidates, offers some slight hint of the emotional states of a goodly number of our candidates at the time of writing final examinations.

Question III poses the interesting query--"Should a Grade XII student be expected to know the "thing" itself or all the various synonyms corresponding to the "thing." By that I mean, should the Grade XII student be expected to understand the significance of an institution, a policy, or an event, or should he be expected to recognize it under any of the great varieties of names that in the course of time cluster around such forms? In this question "Holy See", "Most favoured nation treaty," and "Comintern" represent ideas that may be expressed in a variety of ways.

On the other hand, "Monroe Doctrine," "Open Door policy in China," and "Mandates" all signify ideas, the expression of which, by and large, is confined to a single label. In the three cases in which the things designated are each universally known by a single name the score is 75 percent or higher. In the three cases where the things designated are known by a variety of names, the score ranges from 30 per cent to 42 per cent. These results seem to indicate that the student is handicapped by meeting a strange name for a familiar idea.

Question V offers some eighteen items dealing with persons in the news. This was the only purely "current event" question on the paper and, as might be expected was answered correctly by a larger number of students than was any other question. It was, on the whole, the poorest of all the questions in the matter of discriminating the best third from the poorest third. Four items of this question actually show a minus index of discrimination; i.e., on these four items, namely (i), (y), (n) and (q), the poorest third did better than the best third. It may be pointed out here that the two items, (b) and (k), having the highest index of discrimination, are items that could only be learned from Social Studies texts or references. Items (j) and (n) each had an index of discrimination of -17, and hence along with a number of accompanying items of a positive but very low index would appear to have no value whatever as test items.

With Question VI we reach the first of the options. The three items here used seem to be of almost equal value as a means of sorting out the best from the worst. This option, as each of

the others, other things being equal, we would expect to be attempted by approximately 197[1] students. Question VI drew slightly over its normal quota.

Question VII was attempted by a number noticeably less than the 197 we might expect. Especially is this less-than-normal number noticeable in the middle and poorest groups. I am unable to suggest why this question was attempted by only two-thirds the number one might expect.

The question which deals with the failure of the German Republic, (No.8), was answered by 236 students, or approximately one-third more than chance would suggest. The causes for the popularity of this question and the one following, No. IX, are obvious from a casual observation of texts and manual. This question deals, too, with a matter that would at the moment (June, 1940) be uppermost in the popular mind.

No. X was the least popular of the options offered in Part C. It was so for the same reason, I believe, that No. I(c) was the least popular

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[1] From Question VI to the end of the paper there are 8 questions, 5 of which must be answered. It is assumed then that normally 5/8 of the total cases would attempt each option.

question of Part A. The course at no place seemed to demand a specific consideration of the material covered by this question. It is not surprising to find, then, that the three items which comprise it are among the lowest in discriminatory powers.

Question XI(a) has an I.D. of 52. The knowledge necessary to answer it is not, as far as I can find, available in the text, nor in the manual. At least, such knowledge cannot be found at either source in its required form. Its index of discrimination is higher by some twelve or fifteen points than that of any of the other options. This seems to indicate a tendency for the more obscure items to serve as a better medium of discrimination than the more obvious items. For example: to return to Question V, the most obvious bit of current information asked for in this question was a knowledge of Chiang Kai-Shek. Its index of discrimination was -17. The item least mentioned in the course, and no longer of current interest, viz., a knowledge of Sir Eric Drummond, has an index of discrimination of 43.

The two items that comprise question XII prove quite normal in the number of students who answer, but the index number of each is among the lowest.

Question XII represents the only attempt that the test paper makes to test any of the results of the revised techniques and objectives. Its index, number, too, is one of the lowest. That is to say, as a question it was not highly useful in marking off the bad from the good. It was answered by a normal number of candidates. The poorest group did better here than it did on any other of the options, with about three exceptions. The best group achieved approximately the same average mark that it made on each of the other optional items.

The response to No. XIII suggests that, by and large, the new techniques have not found widespread application in our schools. The relatively good response of the poorer section may be due to the fact that the poorer group is made up of older students. Even a year's age-difference at this level may represent a great difference in maturity.

There is no doubt that ability to read and interpret material of this nature does improve with maturation, even when there has been no advance in formal educational achievement, and we would, to repeat, expect to find more adults in the poorest group.

As has been mentioned above, Question XIII represents the only attempt made on this paper to test for any of the new objectives laid down by the revised course. It seems inadequate insofar as only one objective was tested by this "new" question, viz., ability to interpret historical material. There are eight objectives for the Social Studies stated by the Programme of Studies for the Intermediate School, and some fourteen objectives implied.

I shall refer to the above aspect of the paper more fully in the Chapter that follows.

CHAPTER IV

DISTRIBUTION OF MARKS.

It is the purpose of this chapter to give the reader an adequate idea of how the marks for each question were distributed among the 315 cases studied. This aspect of our investigation should serve to indicate in some measure the "usefulness" of each item on the test. If, for example, we find, as we actually do find in Question I, that the distribution of marks for any given question approximates the normal distribution, then it is indicated that this question is functioning to some exent in measuring what it purports to measure, and hence has some degree of validity.

The reader is reminded here that the statistical data presented in this chapter serve but to indicate certain possibilities and tendencies. In a subject such as Social Studies, where so much is dependent on personal feelings and attitudes, very little indeed is susceptible of absolute proof. Such data as is presented here, however, do serve some useful prupose in our search for improvement.

By way of helping the reader who may be inexperienced in such procedures to understand the material of this chapter, I shall set down the frequency table for Question I as follows:

TABLE II

FREQUENCY TABLE FOR QUESTION I

Scores[1]	Frequency[2]
1	10
3	3
5	16
7	17
9	24
11	36
13	40
15	51
17	46
19	27
21	25
23	18
25	2
No. of Students	315

From the data of such frequency tables a column diagram was drawn to illustrate the distribution of the scores for each question. I may point out here that in

[1] These scores are in steps of 2. "1" includes "0" and "1". "3" includes "2" and "3", etc.

[2] Number of students who made the corresponding score.

Figure 1, illustrating the distribution of scores for Question I, the base line is numbered in steps of 2. This was made necessary by the fact that Question I is valued at 25 marks, and space does not allow the abscissa of the diagram to be numbered in steps of 1. All the other column diagrams of this chapter are numbered in intervals of 1.

The column diagram (using Figure 1 as an illustration) enables us to answer such questions as the following:

1. How many people made a score of 8-9? (24)
2. How many people made a score of 20-22?(25)
3. Is a score of 12-16 high, low, or average? (Average).
4. What is the mode? (14.5)

and many other questions of a similar nature.

The series of column diagrams will, in short, answer a number of questions designed to throw some light on the relative efficiency of each of the 13 questions as a testing device, and insofar as they do that they will serve, along with the index of discrimination, as a measure of the validity of the paper.

The reader will find a number of observations concerning each question on the page following the corresponding illustration.

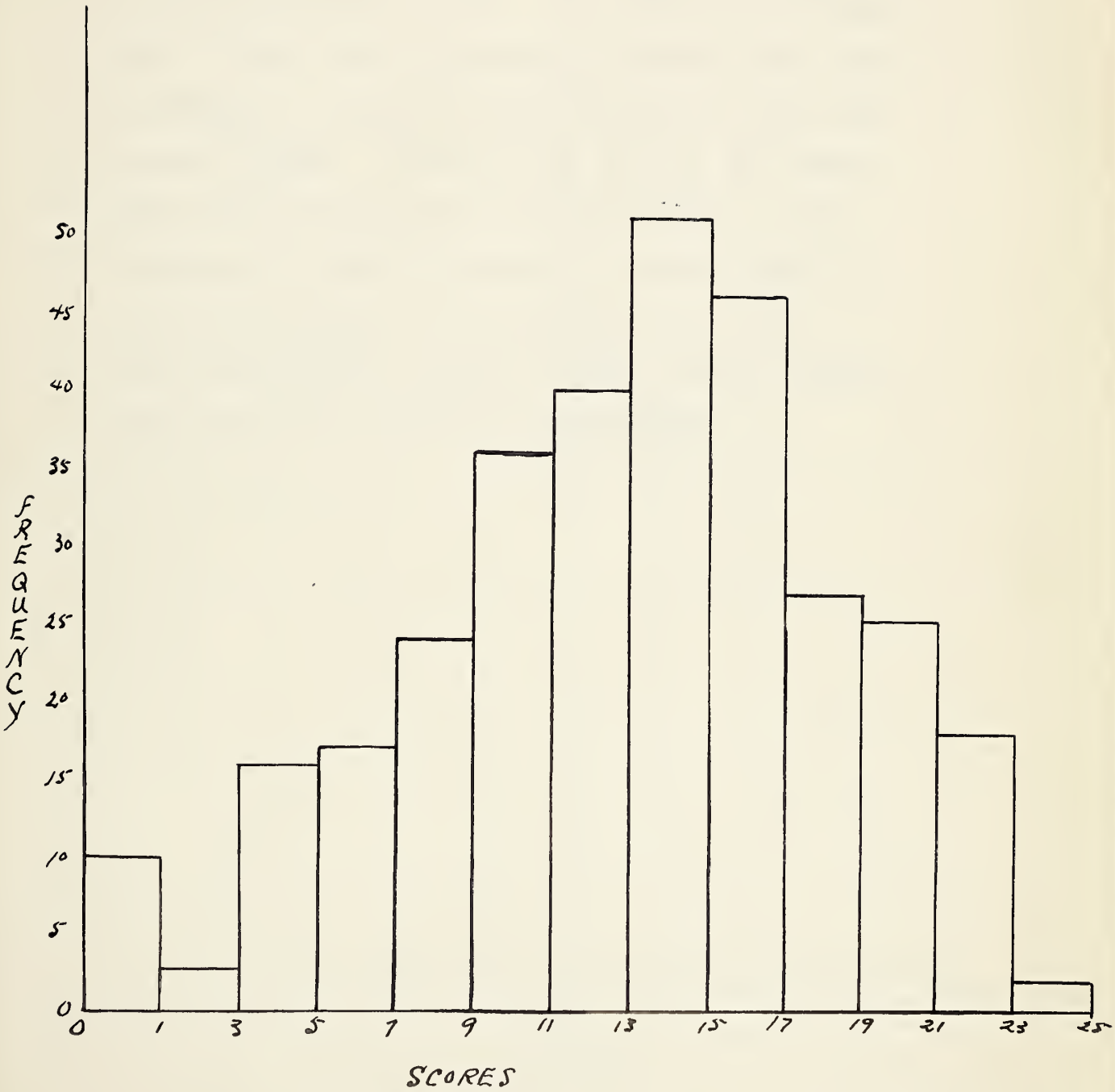

Figure 1

Distribution of Scores for Question I.-
315 Cases

Figure No. 1 shows the distribution of marks for question I. This question was answered by each of the 315 cases. Its index of discrimination is low; that is to say, it proved but a poor instrument in discriminating between the best and poorest groups. About 77 per cent of the candidates made 50 per cent of the raw score, or over. It must be pointed out here, of course, that this question represents four possible options and we would consequently expect to find a higher general score here than proves to be the case.

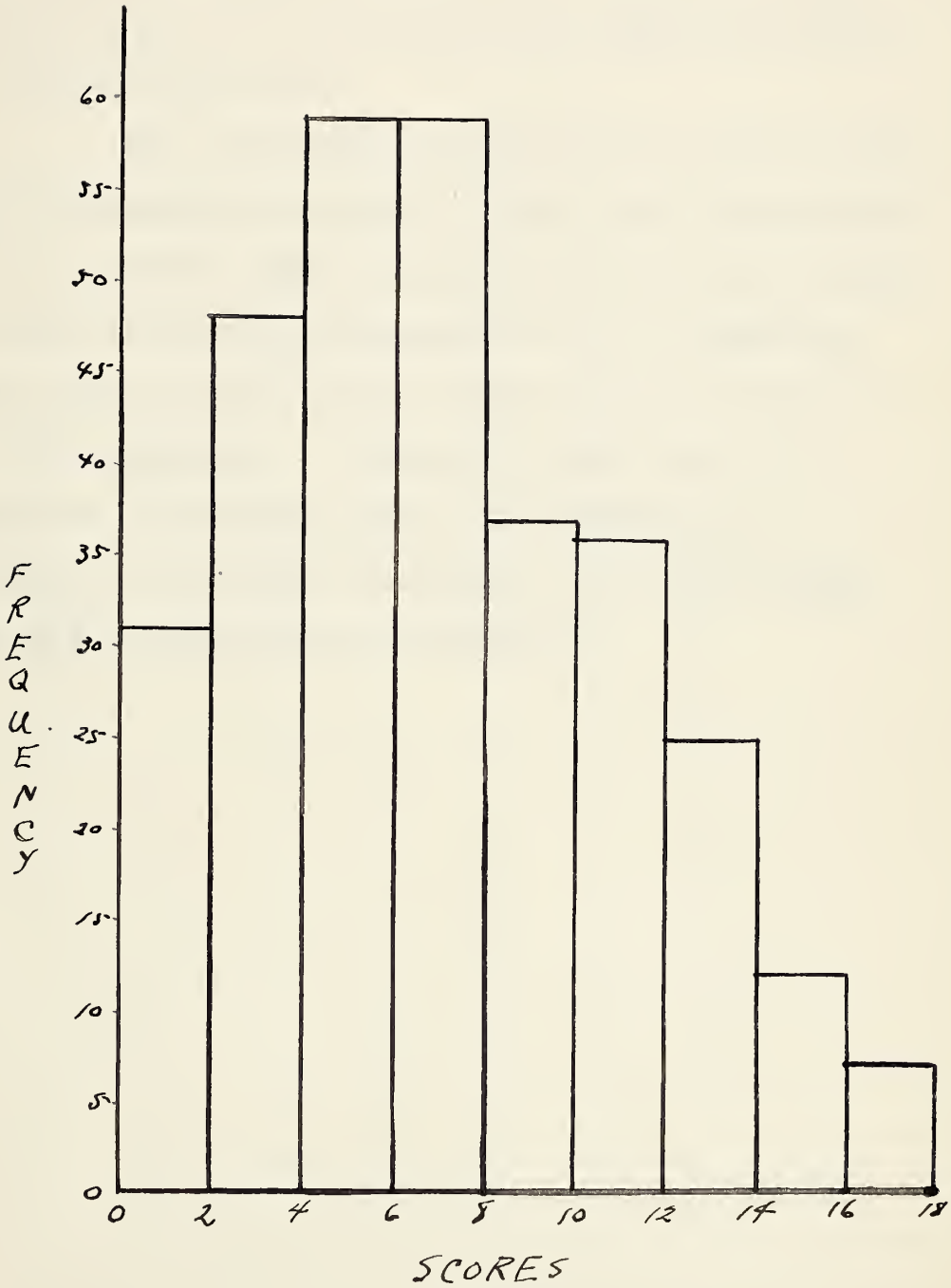

Figure 2

Distribution of Scores for Question II.-
315 cases.

Figure No. 2, which illustrates the distribution of marks for Question II, shows that only 37 per cent of the candidates have made 50 per cent or over of the marks.

Its difficulty as compared with Question No. 1 may be accounted for partly by the fact that Question No. 1 contained four options and would be more likely to fall within the candidates' field of knowledge, and partly by the fact that this Question II had to do with geography. Though the possibility of a question in geography might be inferred from the outline of the course of studies it is not brought clearly to the teacher's attention.

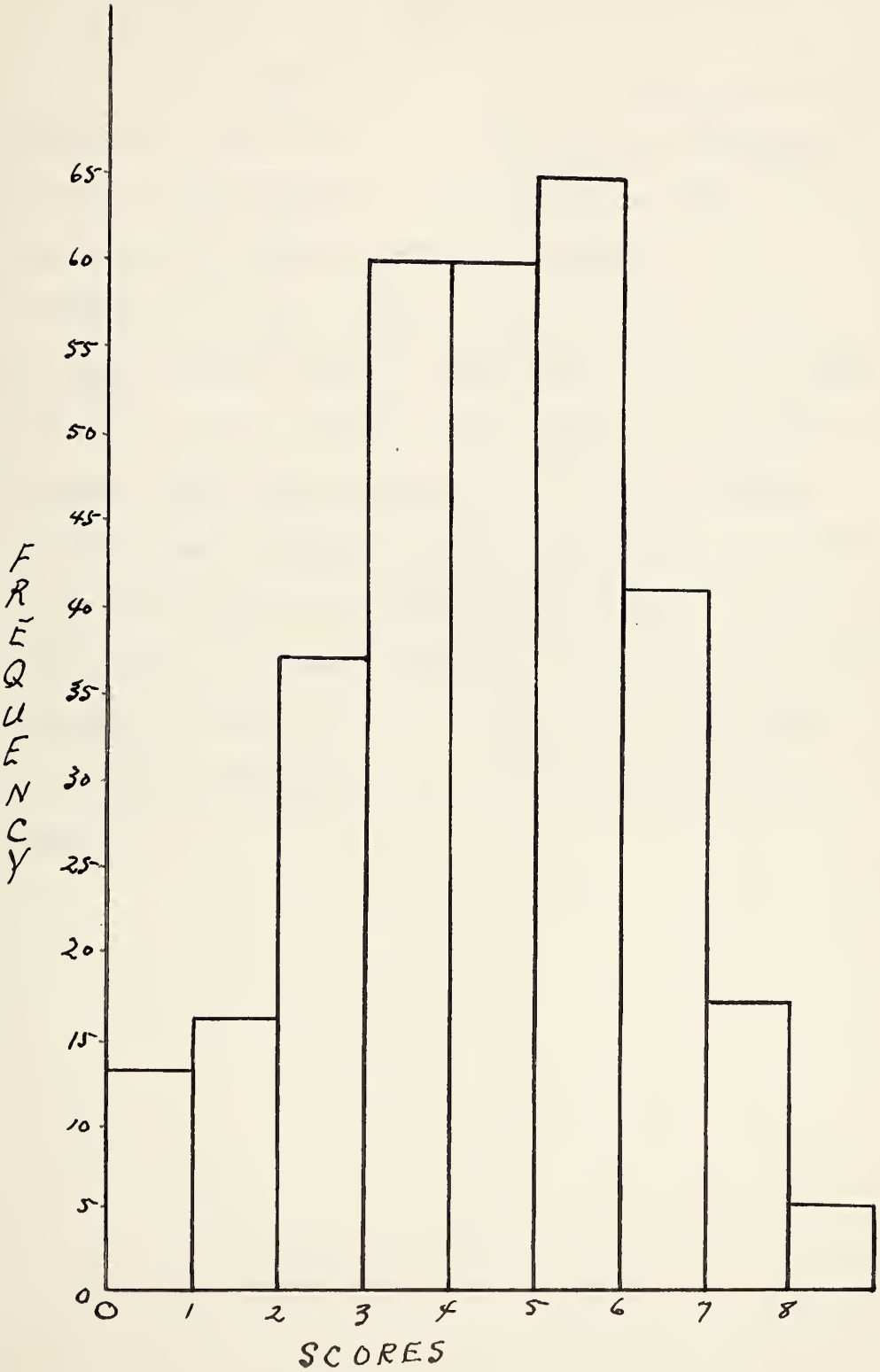

Figure 3.

Distribution of Marks for Question III.-
315 cases.

The distribution of marks on Question III shows that 188 cases, or approximately 60 percent of those who answered it, made 50 per cent or more. Question III consists of eight distinct and mutually unrelated items. Practically every one of these items showed a higher discriminatory power than any of the items in the questions preceding. Though, relatively speaking, but a small number of items was offered, this question made in itself a miniature objective examination, and the items, though few in number, covered a comparatively wide section of the course. In any case it was known noticeably better by the best third than by the poorest.

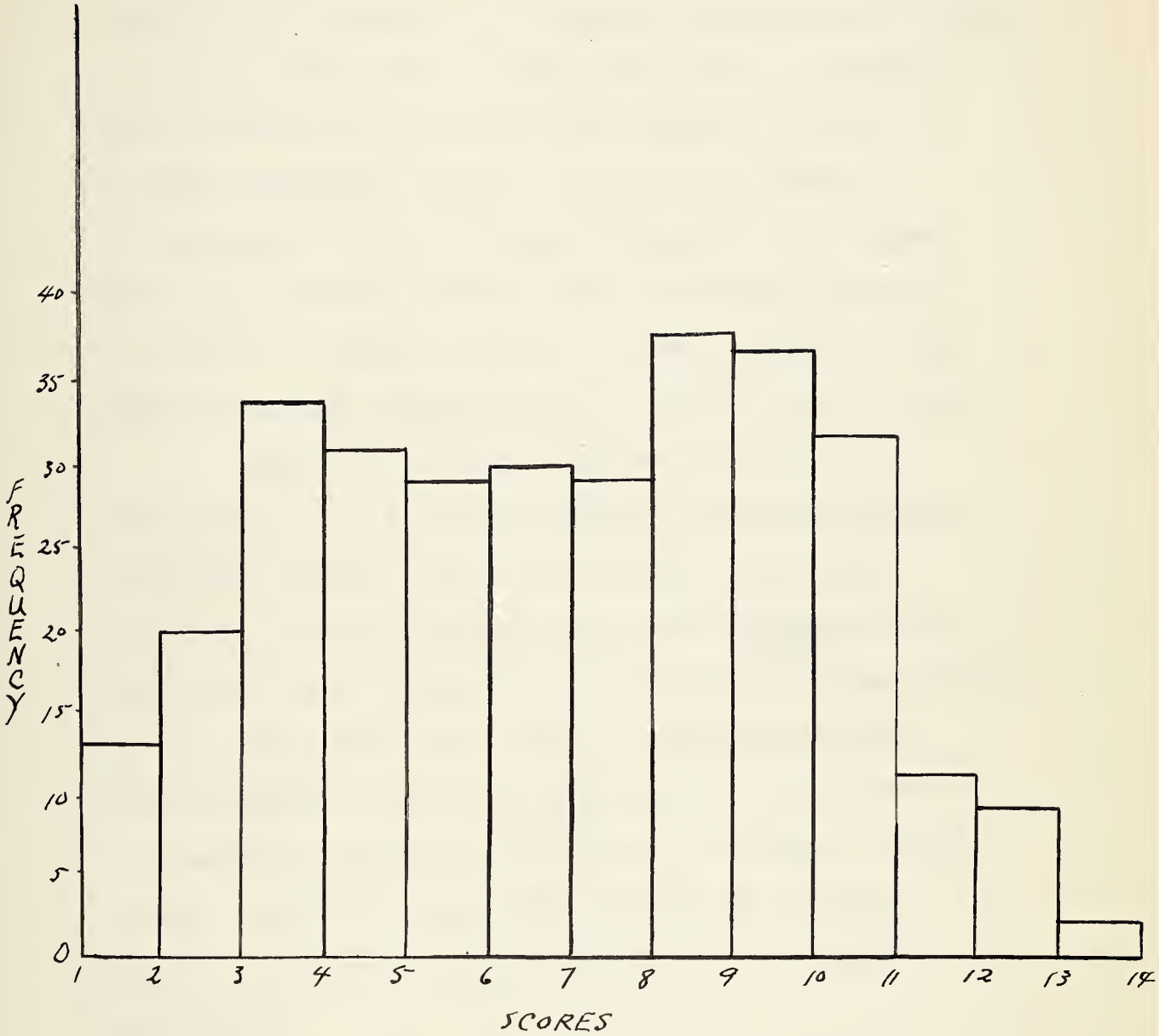

Figure 4.

Distribution of Marks for Question IV.-
315 cases.

Figure 4, illustrating the distribution of marks for Question IV, shows, at first glance, an unusual distribution. A frequency polygon constructed on top of this column diagram would show a constant drop in the curve from the 21st percent to the 57th percent interval; that is to say, from a score of 3 to a score of 8. It also is bi-modal, with one mode located at score 3 and the other at score 9. It has a much higher index of discrimination for the (a) part of the question than it has for the (b) part.

These variations from the normal may be accounted for by the fact that the two parts measure different values. Part (a) asks for very slight knowledge of six treaties chosen from eleven options. This part seems in the main to be measuring recognition. The (b) part sets down a few of the terms of each treaty listed in (a) and the candidate is requested to associate the terms of (b) with the proper treaty of (a). This (b) part, then, appears to measure recall and hence for most students would be more difficult.

It has a noticeably higher score-result on the (a) part than on the (b). This may be explained by the fact that more students would know one fact about any given treaty than would know two facts about the same treaty.

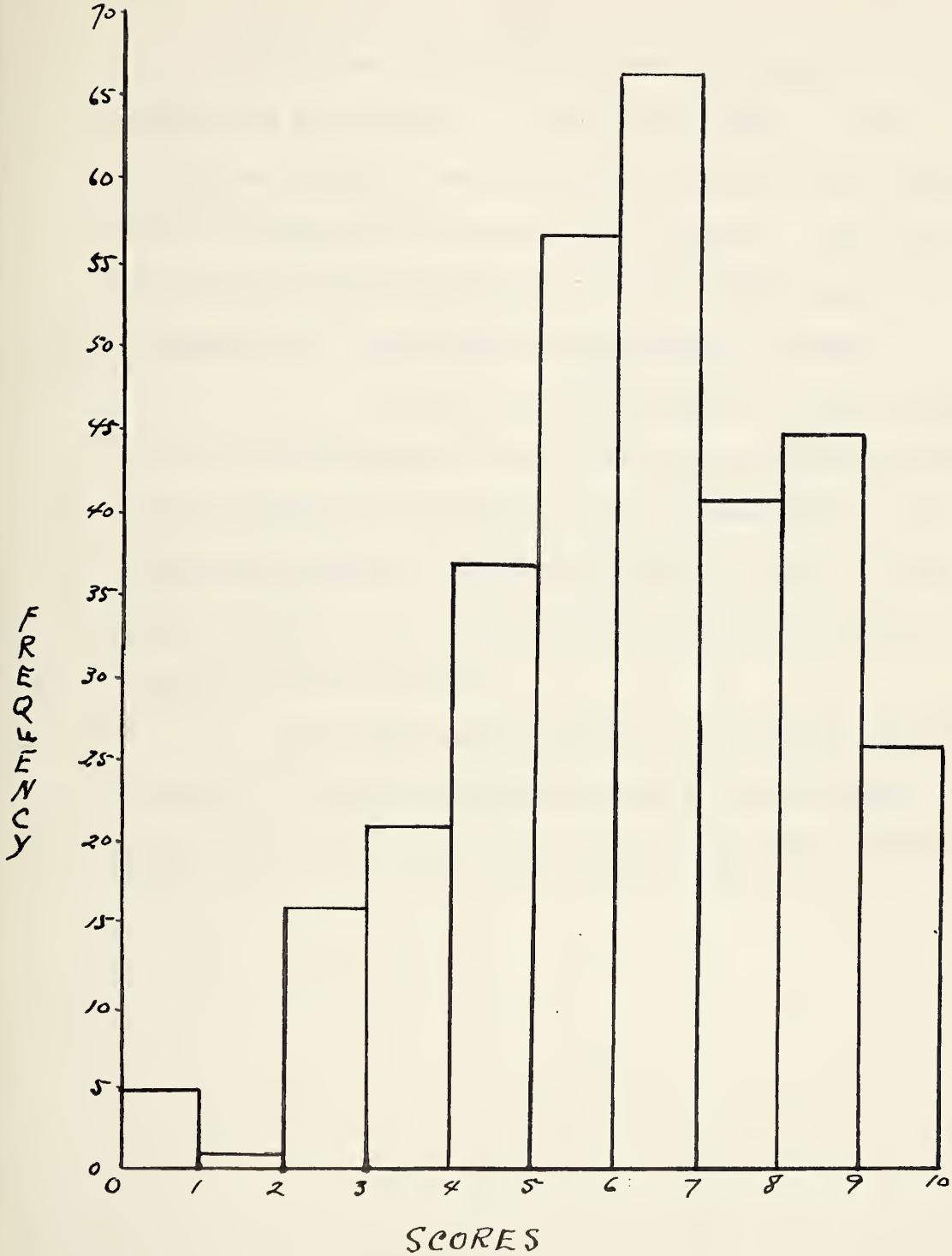

Figure 5.

Distribution of Marks for Question 5.-
315 cases.

Figure 5 illustrates the distribution of marks on Question V. This is the last of the compulsory questions and thus the last of the questions to be answered by the whole 315 cases. In this question about 74 per cent of the total number of cases made 50 per cent of the marks, or over.

Of the eighteen items asked in this question it is interesting to note that the most difficult and most obscure of the items, viz., item (b), has the greatest power of discrimination, 43. Two of the more obvious items, (i) and (n), actually have a minus discrimination.

As might be expected on a question of this nature, a larger percentage made a perfect mark than did so on any other question in this section.

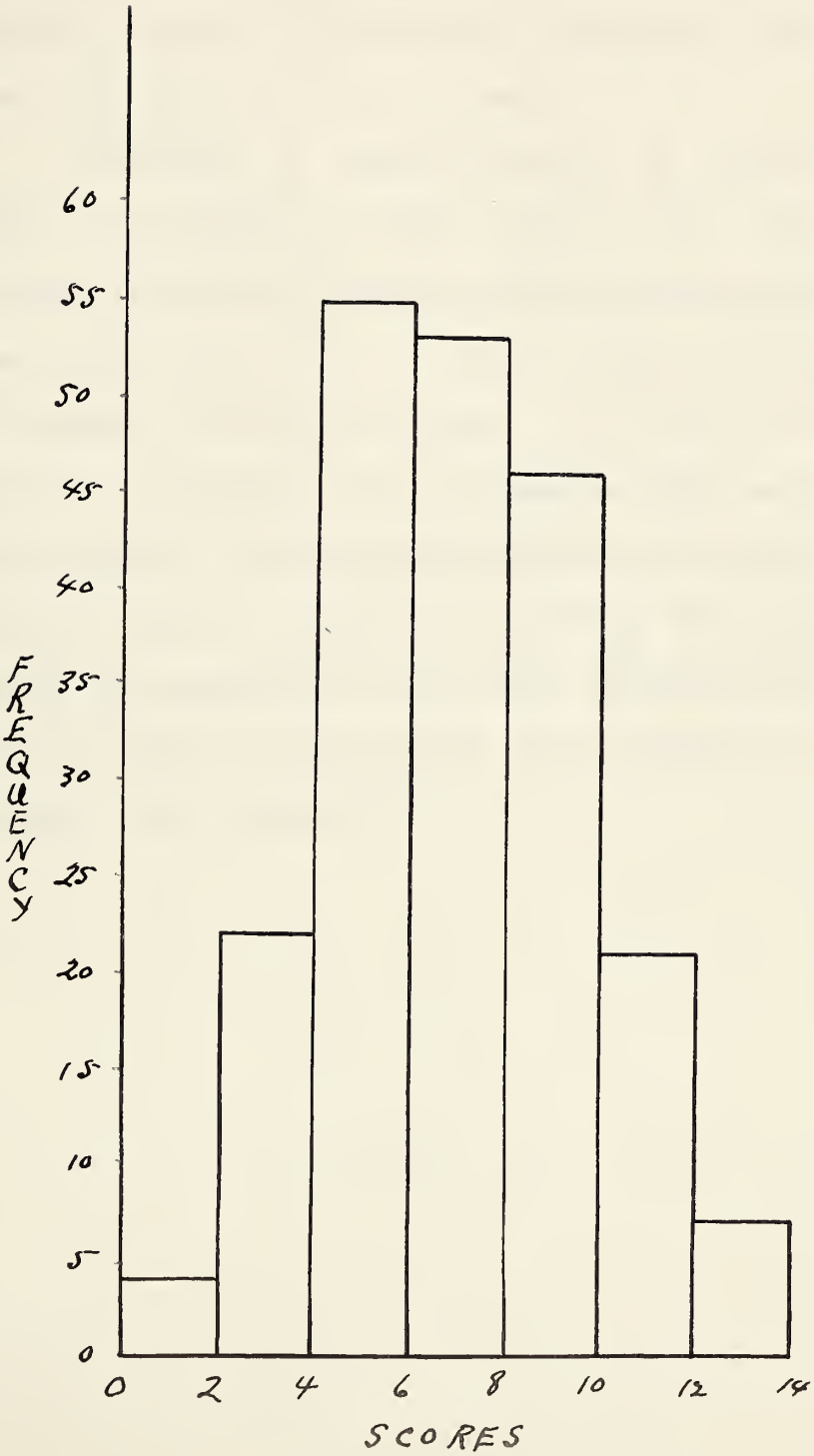

Figure 6.

Distribution of Marks for Question VI.-
207 cases.

The accompanying illustration for Question VI shows the distribution of marks on 207 cases. Sixty-one per cent of these 207 candidates made 50 per cent of the marks, or over.

Its index of discrimination, 32, is about average for questions of this general type. The raw score for the (b) section was low, ranging from 20 per cent correct in the poorest group to 49 per cent correct in the best group. It is not at all clear why much higher marks should be made on the (a) and (c) items of this question than on item (b). The same books and manuals, I believe, that might be utilized as sources for the answer material required in the (a) and (c) parts would prove useful in answering this item also.

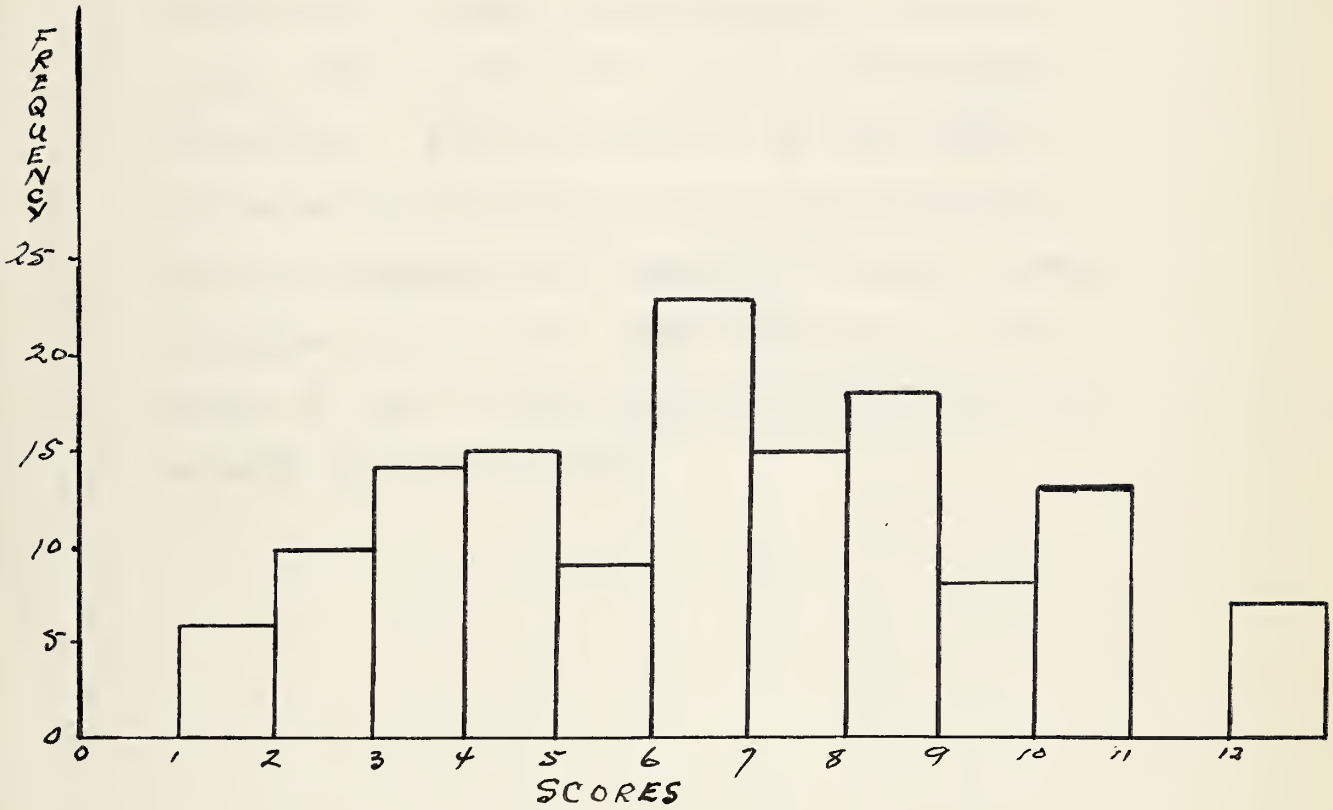

Figure 7

Distribution of Marks for Question VII-
141 cases.

Figure 7, illustrates the distribution of marks on Question VII. One hundred and forty-one candidates answered this question. Approximately 61 per cent of the 141 cases made 50 per cent or over. This question, you will note, falls in Part C and is, as a consequence, an option. Its difficulty is to some extent indicated by the fact that only 141 candidates out of a possible 315 tried it. Though a normal fraction, 61 per cent, made 50 per cent of the marks or over on this question, only 20 per cent made 75 per cent or over.

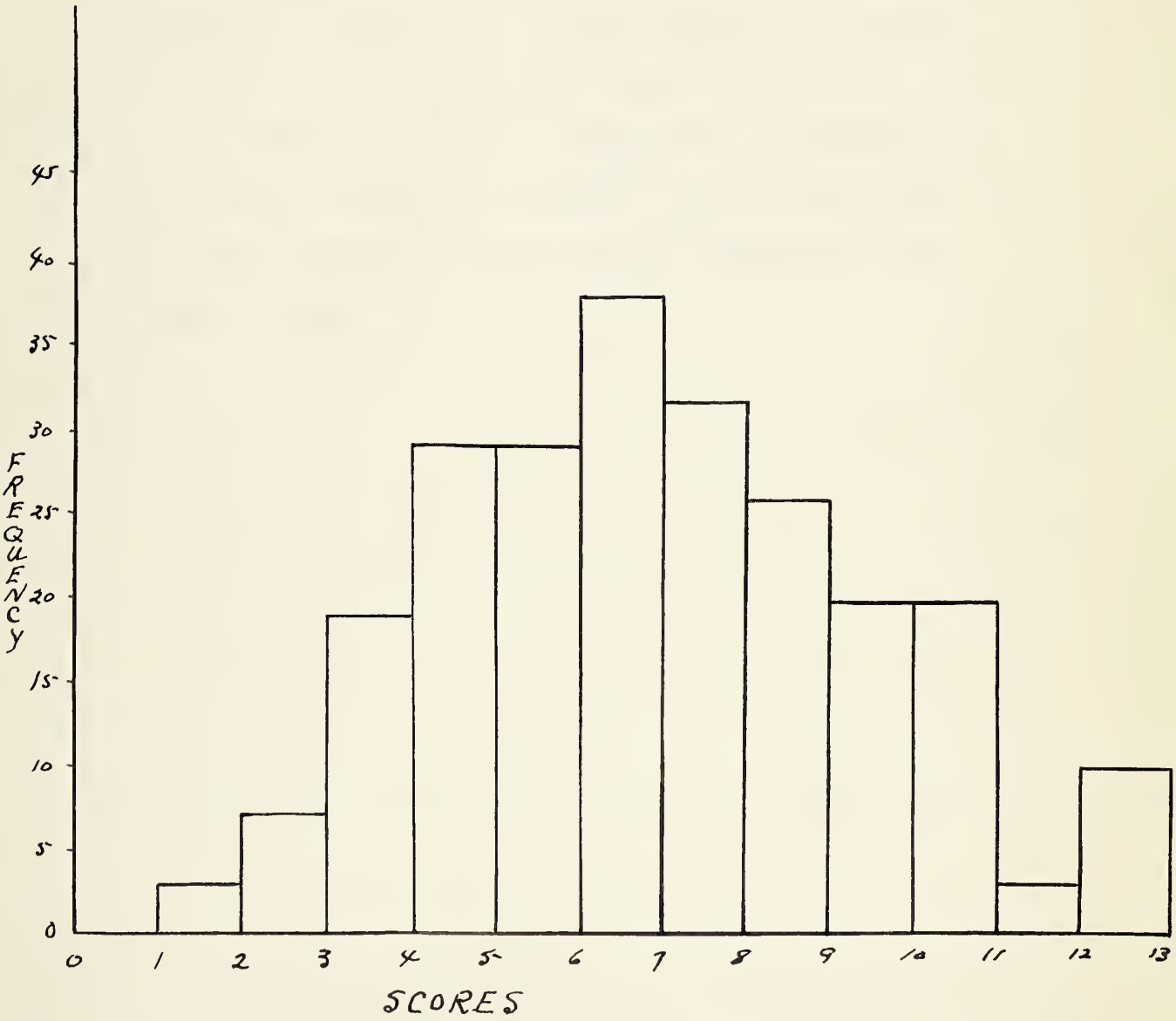

Figure 8

Distribution of Marks for Question 8.-
236 cases.

On question VIII approximately 63 per cent made 50 per cent of the marks or over. The percentage of marks made on this question is higher than any of the three preceding questions of this section. With the exception of Question IX, (a similar question on Italy,) Question VIII was the most popular of the optional section of the entire paper.

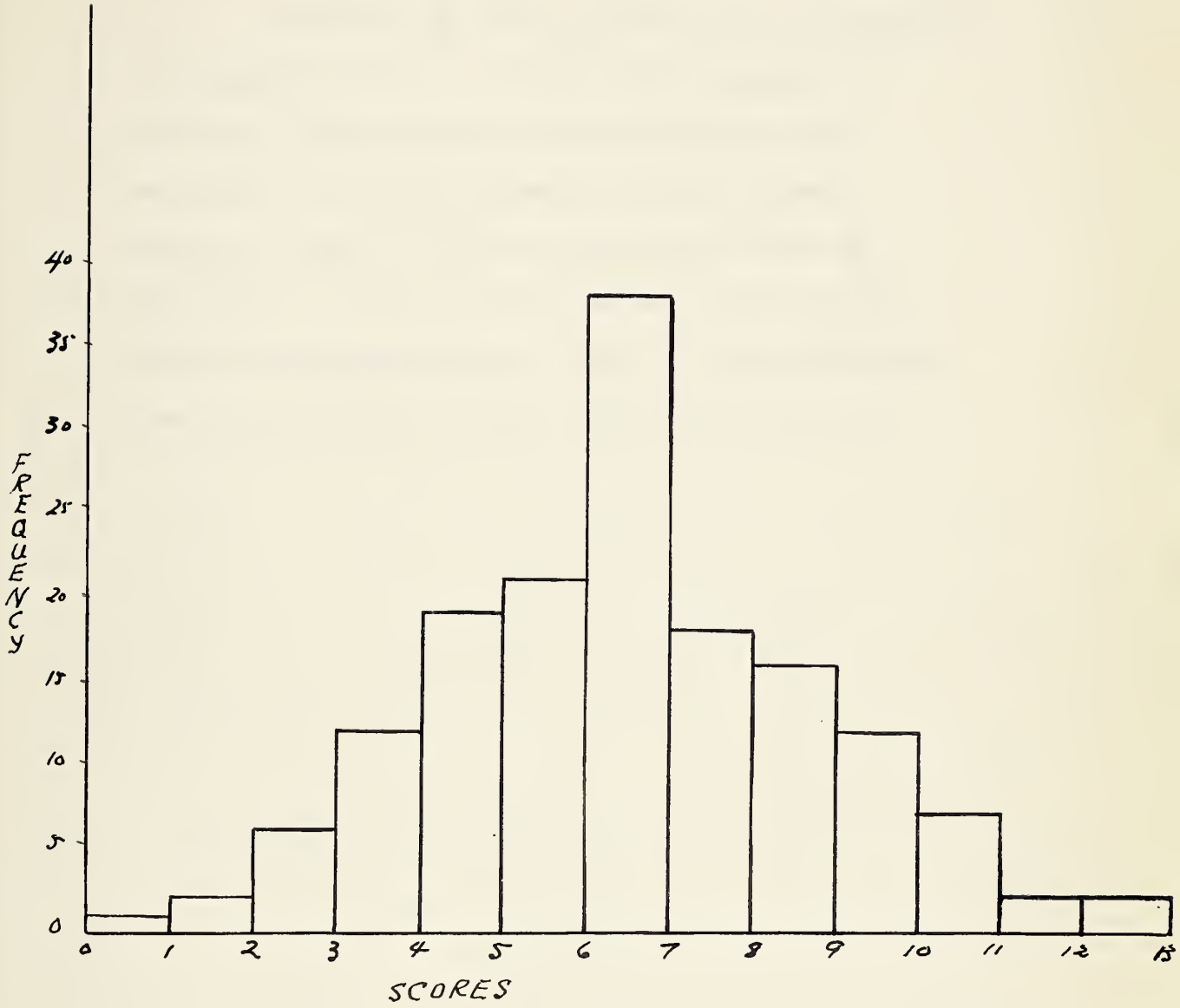

Figure 9.

Distribution of Marks for Question IX.-
156 cases.

Question IX, illustrated by the accompanying diagram, shows a distribution somewhat at variance from the usual pattern found in an analysis of the test results of this paper. Sixty per cent of the 156 cases have made 50 per cent or over on this question, but of this 60 per cent almost 25 per cent of the candidates have made between 50 per cent and 60 per cent.

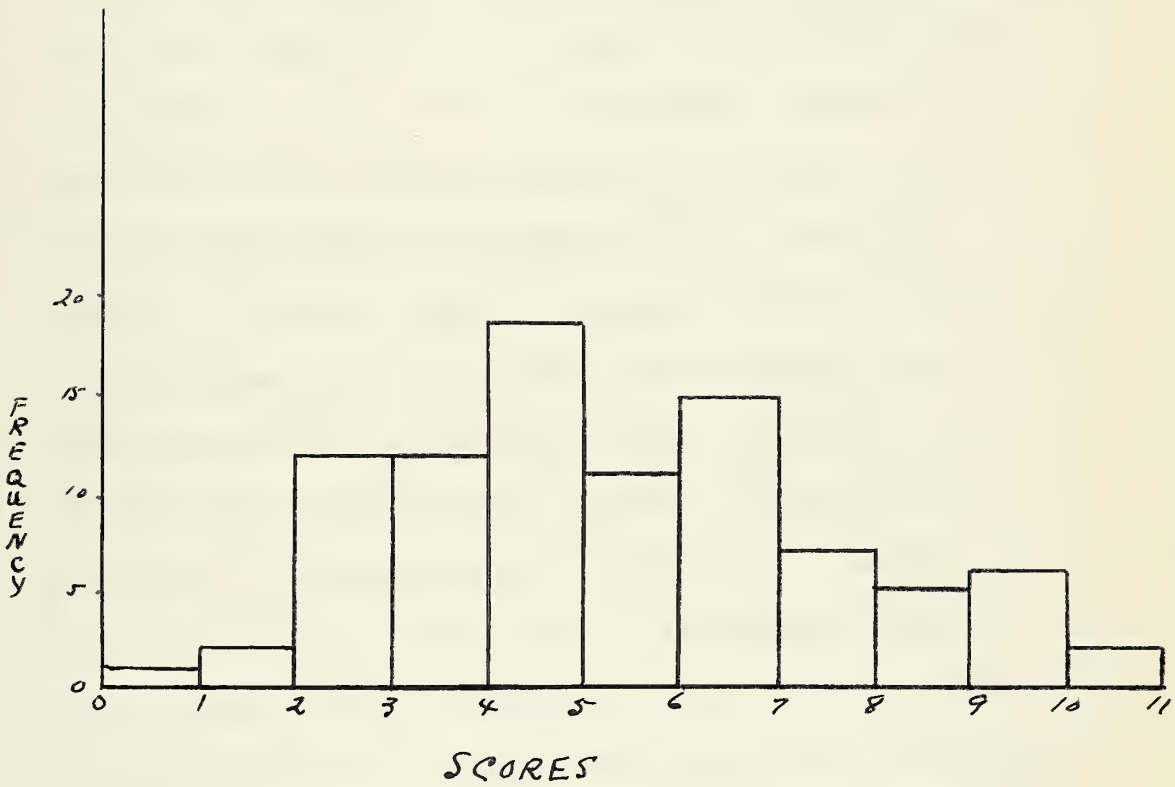

Figure 10.

Distribution of Marks for Question 10.-
97 cases.

Question X was answered by only 97 candidates out of a possible 315. Normally we would expect 197 students to choose this question. Only 36 per cent of the cases made 50 per cent of the marks, or over.

The relatively small number of students who answered this option, and the very low score resulting, is no doubt due to the fact that this question does not appear to be a part of the course. It may be argued that the material required to answer this question adequately is implied in the course of studies. The fact that no single student out of the 315 cases dealt with was able to answer the question so as to obtain full marks would seem to indicate the fact that the course of studies does not imply the need for this knowledge. Besides this, it is pointed out that this question called for specific and very definite facts. It was in no way an effort to measure any of the new objectives of the revised course. Its index of discrimination, its distribution of marks, the fact that well over two-thirds of the candidates avoided answering it,--all these factors indicate that this particular question has no place on a test for Social Studies 3.

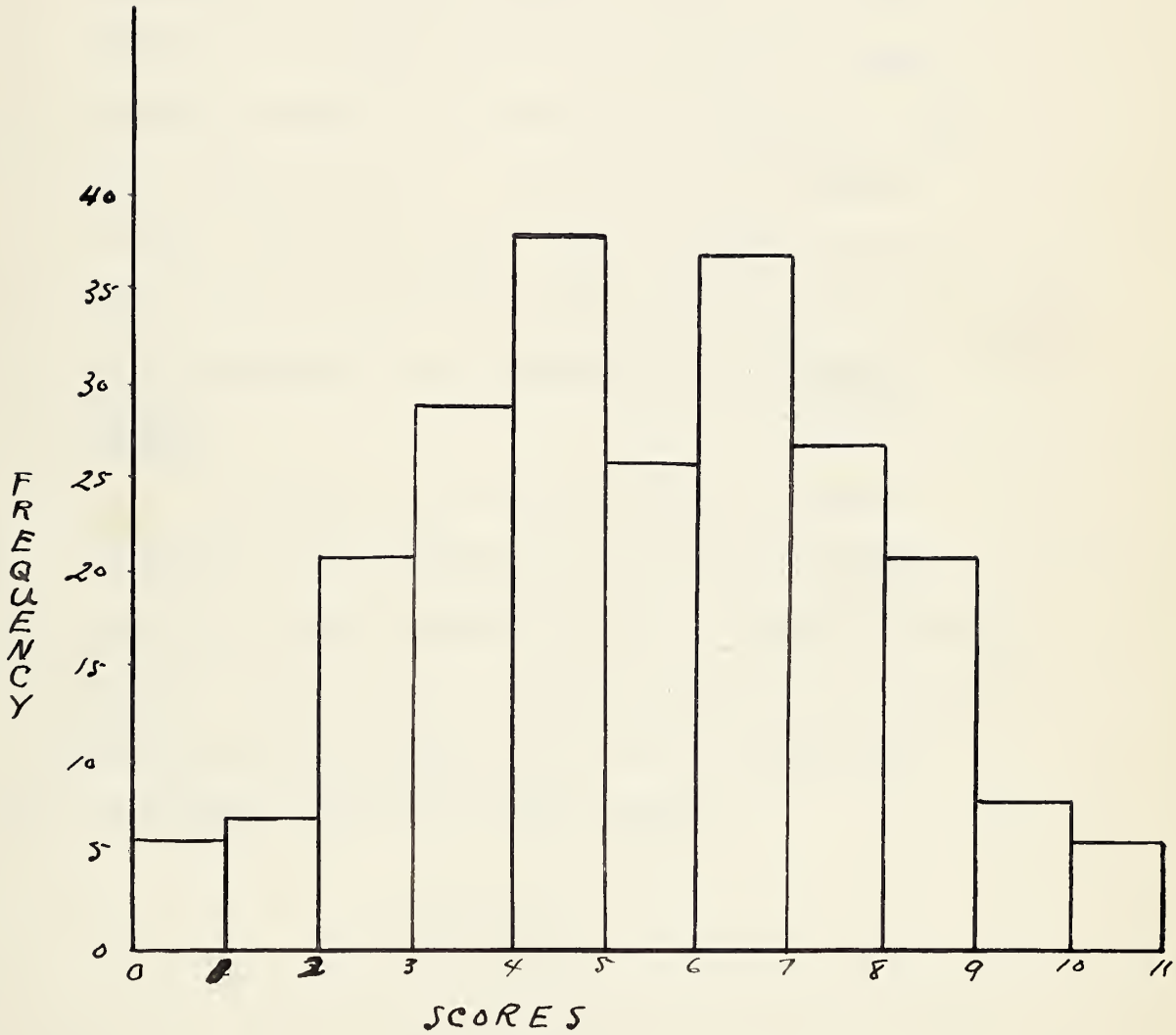

Figure 11.

Distribution of Marks for Question XI.-
231 cases.

The distribution of marks on Question XI shows that 58 per cent have made the conventional "pass", or over. On the two items of this question, it is worth noting that in the two items (a) and (b) the best third of the cases do much better on the (a) part than on the (b). The poorest third of the cases do noticeably better on the (b) part. The explanation for this may be in the fact that the (b) part of this question may be interpreted as <u>current events</u>.

It has come to my attention a number of times in my efforts to analyze this test paper that the poorest students in Social Studies are at their best in current events, and as has been shown in a number of items of Question V, sometimes surpass the best group.

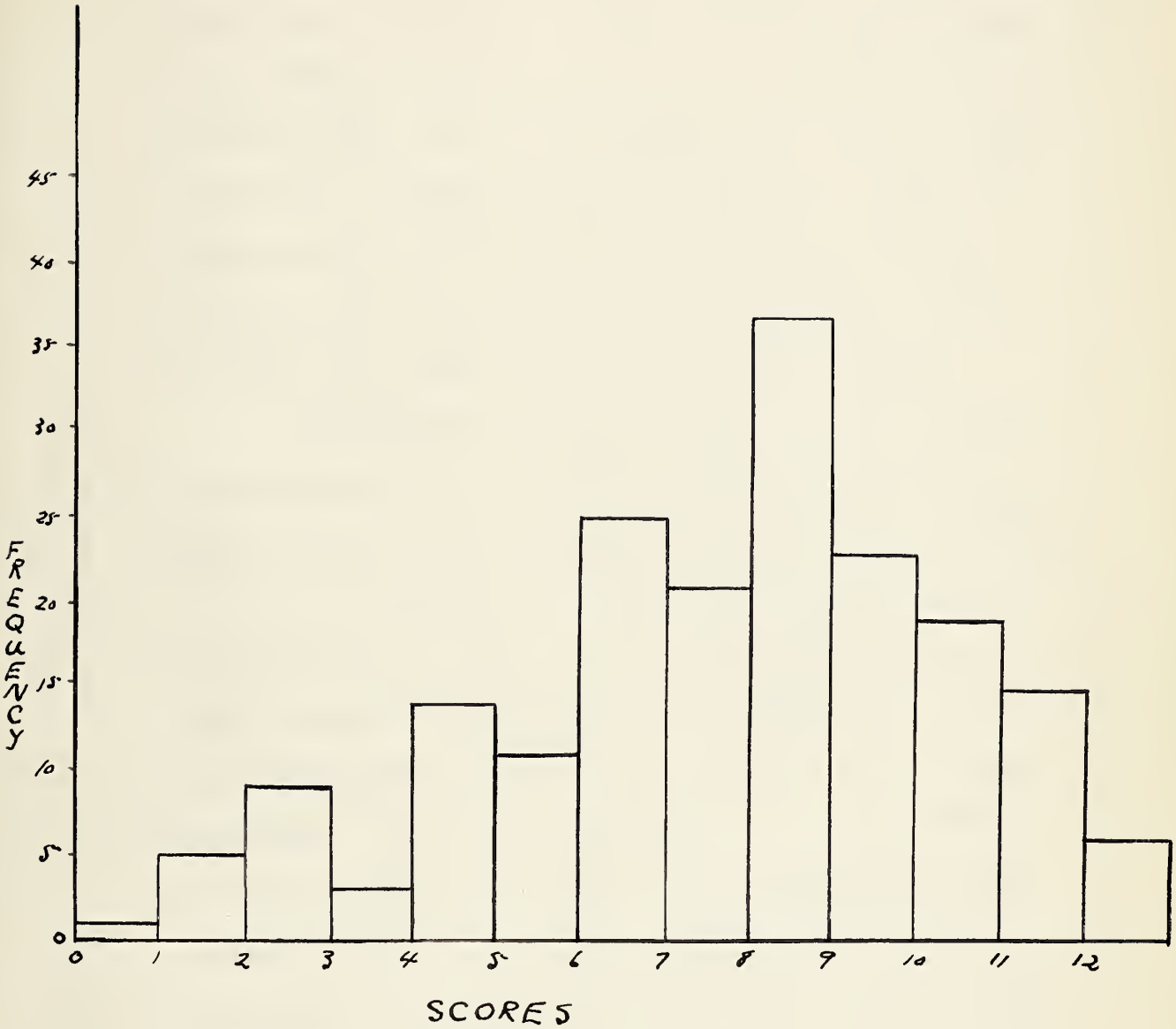

Figure 12.

Distribution of Marks for Question XII.-
200 cases.

In Question XII, the distribution of marks shows that 73 per cent of the students who answered this question made 50 per cent of the marks, or over. This is higher than the average by some 13 per cent. There is a marked similarity between the scores obtained on the (a) and (b) parts of this question. Question XII was answered by 200 candidates, which is about the number which chance would dictate.

Its index of discrimination is low--equally so on both items. It is low because the poorest group made exceptionally high marks on this question.

To refer back to the similarity of scores made on the two parts of this question, it may be well to mention here that on the greater number of these sub-questions such a similarity is not always apparent. Where this similarity is consistently lacking it would seem that the same section of the course is not being tested. Particularly in that section of the course where there are a great number of options allowed there would appear to be an injustice suffered by the candidate if two or more sections of the course are tested by a single question. Questions X and XI, perhaps, show this weakness.

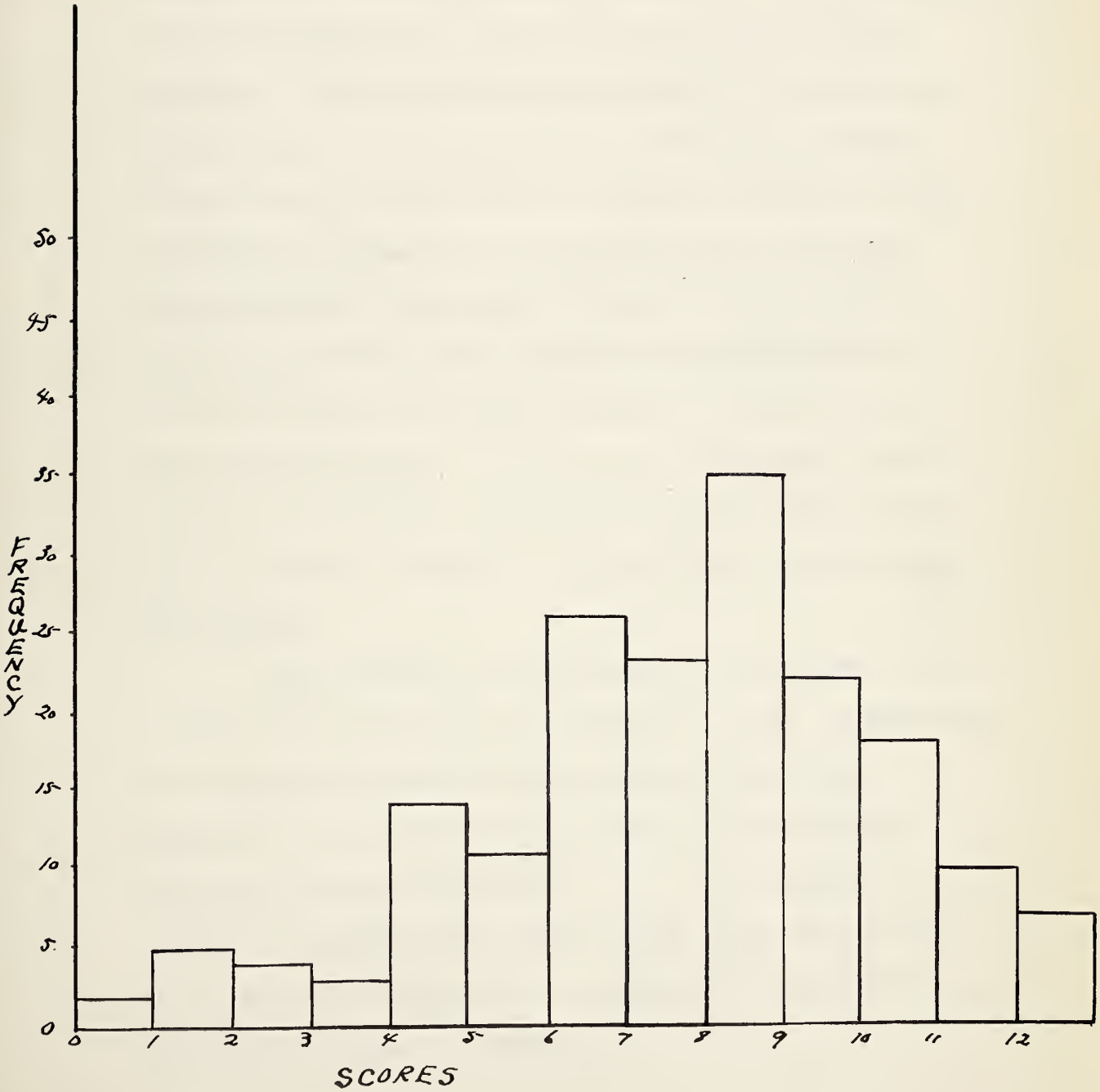

Figure 13.

Distribution of Marks for Question XIII.
184 cases.

Seventy seven per cent of the cases made 50 per cent or over of the marks on Question XIII. This is the highest number to make the conventional "pass mark" on any question in Part C. It is equalled only in Question I, where there are four options offered. This question may be said to be the only effort made by our examiners to test any objective other than the retention of factual material. Other questions may purport to measure other objectives, but as long as the answer to each of them may be lifted whole from any number of books, then the objective actually being measured is the retention of factual material. Of the total sixty-odd items on this test paper, only the items of Question XIII may be said to measure something other than factual knowledge.

The question was attempted by 184 cases. The poorest group did comparatively well, and consequently its index of discrimination is relatively low. Coming at the end of a long paper, it is possible full justice was not done to it. It is thebest group of students who would suffer here, for it is they who write most and as a rule are most often pressed for time at the end.

I suspect, too, than an effort to measure a skill of the sort that Question XIII attempts to measure had best be done objectively or not at all. Especially is this true in a question of this type, where there are <u>four</u> distinct items. Some markers have a tendency to give the student the benefit of the doubt where a single mark is concerned--others allow the student no such advantage. The same answer to question XIII, if it were marked by markers of the types mentioned could thus vary by one-third its total value, or 33 per cent.

CHAPTER V.

WHAT DOES THE PAPER TEST?

A. The Objectives Tested.

"There can be no doubt that faulty techniques of testing and examining are in a large measure responsible for the aridity of school courses and the barrenness of their results. Naturally the type of examination determines the type of teaching procedure. The prevailing type of examination puts a premium on the reproduction of memorized subject-matter. It does not test for the realization of professed objectives. As stated in the Programme of Studies for the Elementary School, the pupils' learning should eventuate in the following desirable outcomes; knowledge, with insight and understanding; habits; skills; interests and appreciations; attitudes and ideals. It is the business of examiners to test for these outcomes."[1]

The excerpt from the departmental regulations quoted above makes clear the general objectives of the revised course. It makes clear, too, the part that the official testing program might be expected to play in the achievement of those objectives. It shall now be my purpose to examine the Social Studies 5 paper of 1940 in the light of:

(a) The general objectives of tests and examinations as set forth in the Programme of Studies for Intermediate Schools, page 13, and,

(b) The fundamental objectives of the Social Studies programme from page 29 of the same publication.

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[1] Programme of Studies for the Intermediate School, p.12

To do this it is necessary to scrutinize each item on the test and indicate insofar as it is possible the type of answer-material required, and the sources from which it might be obtained, as a further guide to an understanding of the professed aims of the revised course. I shall set down here the general objective that would apply in the case of High School tests, viz:

> "3. It will be the endeavour of the Board to make the examination of such a character that it will defeat "cramming", and offer no encouragement to teaching that is aimed directly at examination results. In other words, the examination will require the adjustment of teaching procedures to the objectives of the programme."[1]

Question I offers four options, two of which are indicated as complete units in the course of study. I have pointed out above that only those two options, (a) and (d), were answered to any extent on the answer papers.

Facility in answering Question II could easily be acquired by map drill.

Question III for the most part presents material that in all likelihood would not be "crammed" for examination purposes, at least not in that form, and yet even here six out of eight possible marks may be procured from the little reference (McAuliffe), that was used as the basic text of the course.

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[1] Programme of Studies for the Intermediate School, p.29.

The two items of Question IV may be answered from McAuliffe.

Question V may be classified as a "current-events" question, but even here six of its eighteen items may be answered from the main text.

In Part C of the paper there are five questions to be answered, out of eight. Of these Question VI(b) and (c) items only, Question VII, Question VIII, and Question IX to the value of one-half its total mark, may all be answered from McAuliffe.

By actual count I find that of the 133 marks possible to obtain on the raw score[1] of this paper, 67 marks may be obtained by an intimate acquaintance with "Modern Europe Explained." This gives a transmuted score of 45, to which there might be a maximum addition of 15 for English. The transmuted score is derived from the raw score by a statistical formula explained in Appendix 2.

I should like to point out the large percentage of the paper that may possibly be answered by material contained in the Social Studies 3 manual published by the Western Canada Institute. Answer

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[1] The raw score is the value on the examination paper. It is the actual score given each question by the "marker." It is further explained in Appendix 2.

material for either of two options of Question I, viz., (a) and (b), may be found in the above-mentioned manual. In Part B five out of the eight items of Question III may be found here. Questions IV (a) and (b) may also be answered from this source.

In Part C where five questions are required out of eight, I find that Questions 6, 7, 8, 9 and 12 can all be answered from material contained in this manual. Of course it is possible that other factors than the points mentioned in the official markers' key have played some part in the actual scores, but a careful check would seem to show that the above-mentioned questions could all be answered in full from an intimate knowledge of the material contained in the manual.

It would appear that as long as Departmental Social Studies examinations may be passed by intensive study of any of the various manuals published for commercial purposes, then we cannot hope to achieve either the general or specific objectives of the new course.

The following table has been designed to give at a glimpse the source whence the required answer material could come.

TABLE III.

SOURCES OF ANSWER-MATERIAL

	McAuliffe	Current Events	Manual	Other References	No Specific Preparation Possible.
1a			x		
b				x	
c				x	
d			x		
2a	x		x		
b		x			
c		x			
3(1)	x				
(2)	x		x		
(3)	x				
(4)			x		
(5)			x		
(6)	x		x		
(7)	x		x		
(8)	x		x		
4a	x		x		
b	x		x		
5		x			
6a			x		
b	x		x		
c	x		x		
7	x		x		
8	x		x		
9	x		x		
10a				x	
b				x	
c				x	
11a				x	
b				x	
12a			x		
b			x		
13					x

Of the thirty-two items distingished in Table No. III, nineteen, or almost 60 percent, of the items could be answered by a student whose only Social Studies 3 preparation was an intensive study of the Social Studies 3 manual. This 60 per cent of the items represents a possible raw score of 105, or 79 per cent of the total raw score. Add to this possible 79 per cent another 15 percent for English score, and we must conclude that a candidate whose sole preparation for the examination was an intensive study of the manual could make a possible net score of 94 per cent.

"Modern Europe Explained," by W. R. McAuliffe, is a little book of some 150 effective pages. It is the one book that every Social Studies 3 student must own. Inspection of Table No. III shows that a student whose reading consisted only of this text could make a possible raw score of 52. If his English mark was at the higher level this raw score, plus very little more from the map question alone would place him among those safely "passed."

It has not been argued here, of course, that the teaching procedures suggested as possible have been widely practiced throughout the Province, or for

that matter have been practiced at all. If, however, "the type of examination naturally determines the type of teaching procedure," then the paper being analyzed here can have nothing but a detrimental effect upon the teaching procedures throughout our province.

To clarify the table that follows, I shall set down here from the Programme of Studies the fundamental objectives of the Social Studies Programme:

"1. To facilitate an understanding of our social and economic realities.

"2. To develop ability to see both sides of a question.

"3. To induce an attitude of fairmindedness and a desire to co-operate with others for the welfare of the community.

"4. To train students in the use of efficient methods for securing and organizing information that is available in reference books, atlases, charts, and to extend their use of such tools and pictures, diagrams, maps, graphs and statistical data.

"5. To make clear to students the effect of mechanization on the production of goods and services, and on developments in transportation and communication.

"6. To develop an appreciation of Canadian culture.

"7. To help students understand the contributions of explorers, frontiersmen and statesmen to the grown and development of Canada, and the British Commonwealth; and to understand the contribution made by Canada to the trade of the Commonwealth and the world.

> "8. To foster an attitude of tolerance and respect for world peoples, and a sympathetic understanding of their social and economic problems."[1]

The following table is presented in an attempt to show at a glance what effort has been made to measure each of the official objectives. The horizontal numbers at the top of the table represent the fundamental objectives mentioned above. The vertical numbers represent the questions and sub-questions where it was thought advisable to set them down separately. Where an item is marked with an "x", it means that in that particular question some effort has been made to measure the indicated objective. In the column headed "C" I have checked with an "x" every item that could be answered by previously prepared material.

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1 Programme of Studies for the Intermediate School.

TABLE IV

HOW TEST ITEMS MEASURE OBJECTIVES.

Objectives	1	2	3	4	5	6	7	8	C
1a	x								x
b	x								
c	x								
2	x								x
3	x								x
4	x								x
5	x								
6	x								x
7								x	x
8								x	x
9								x	x
10							x		x
11									x
12	x								x
13				x					

The value of the above table as a scientific instrument is not great. It has, however, some slight value as a check on the amount of effort the examiners have made to test for the various objectives. It will be seen at a glance that the importance of objective No. 1 has been unduly stressed. Further it may be noted that this No. 1 objective simply means the accumulation of factual material.

The two items I have checked in Column 2 may or may not represent an attempt to measure the objective of that column. The material required to answer each item checked in column "C" may be found in various books available to the student, and furthermore it may be found in a form that satisfies completely the demands of the test paper. This being so, then, we may claim in connection with this table:

1. That only one objective, viz., No. 1, is measured.

2. That the paper does nothing to defeat the "crammer," but that rather his activity is encouraged.

In other words, it would appear that the examiners' attitude towards the "crammer" is like the attitude of Robespierre towards God--"If He does not exist we must create Him."

One might say here that the term "crammer" may with justice be applied to any number of teachers as well as students. In any case, as long as the student"crammer" remains the annual recipient of a special bonus in the form of marks, the practice of cramming will continue.

B. The Adequacy of the Sampling.

The Social Studies 3 is composed of the four topics listed below.[1] To determine the efficiency of the sampling I have gone over the examination paper, examined each individual item, referred to the official markers' key to find out the specific answer material required, and thus determined the topic of the course that was being tested by each item.

Certain difficulties were encountered, but on the whole the items corresponded closely to the topics of the course.

In Part A items (a), (b) and (d) were easily traced to their sources in the outline of the course. As suggested above [2] item "c" could not be located in the outline.

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[1] Page 70
[2] Page 20

In Part B the source of all four questions could readily be determined. All of the questions in Part C, with the exception of Question XIII were easily placed. In my tabulation which follows, a special heading is improvised for Question XIII, viz., "Ability to Interpret Historical Material."

On the left margin of the examination paper and under the heading "values", there is a total of 169 marks. This is the total number of marks on the paper for the total thirteen questions. The student, however, was supposed to answer only ten of the questions. The perfect answer paper, therefore, would yield 10/13 of 169, or a maximum raw score of 130. I have set down in column 1 of the tabulation which follows, the marks that could be obtained from a complete knowledge of each of the topics. In Column 2 will be found the percentage of the school year to be devoted to the preparation of this topic. In Column 3 will be found the percentage of marks each topic offers, and in Column 4 the ratio of scheduled preparation time to the marks obtainable.

TABLE V
RATIO OF MARKS ON PAPER TO PREPARATION TIME

Topic Title	Marks	% of School Year	% of Marks	Ratio
Column Numbers	1	2	3	4
I International Relationships	33	25%	19.9%	.80
IIA The Totalitarian States	24			
B The Democratic States	54	30%	47.0%	1.60
III Commonwealth Problems	4	20%	2.5%	0.13
IV Canadian Problems				
A External Affairs	25			
B Internal Affairs	8	25%	19.0%	0.76
Current Events	9	(2.5%)	5.4%	(0.21)
Ability to Interpret	9	-	5.4%	-

The program of studies does not specify any time allottment for current events. This topic must be taken up in class as occasion demands. The department does suggest, however, that <u>one</u> period per week be devoted to this topic. One period per week amounts to one-fortieth of the school year. I have therefore placed in parentheses the corresponding percentage (2.5) and the resulting ratio, (0.21).

This summary indicates that Topic II was unduly weighted. The time suggested by the regulations for the study of this topic is twelve weeks, or 30 per cent of the school year. Its rating on the test

is 46 per cent of the total marks. Its ratio works out to 1.6, whereas the ratio for no other question nearly approaches 1.[1]

On the other hand, Topic III is unduly slighted. Although the outline of the course suggests it be given a period of eight weeks, or one-fifth the school year, on the test it rated a mere 4 marks, or one forty-second of the total raw score, and has a ratio of 0.13.[1]

Although the study of current events might reasonably be expected to include a consideration of underlying causes, the items in current events were confined to personalities and place names only. There was no attempt to test for an understanding of any of the forces that motivate the behaviour of men and nations.

We might conclude from a study of the Table[2] that the test did not give a very thorough sampling of the course. In the older types of test a thorough sampling was not considered an important factor. If the student showed an adequate knowledge of the sections of the course tested it was assumed that he possessed a similar knowledge of the sections not covered by the test. Today, however, when educators are striving to encourage and develop the special interests of the student it would possibly be more satisfactory to both student and teacher if each topic were given its fair proportion of marks on the test.

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[1]If the percentage of marks obtainable on any one topic were the same as the percentage of time allowed for its preparation, the resulting ratio

CHAPTER VI

THE ENGLISH SCORE

It was at first intended by the Department of Education to divide the final percentage marks on the 1940 paper as follows:

Social Studies,	70%
English	30%

The marking, however, proved that 30% constituted an excessive weighting because of the high English scores obtained. It was decided, finally, to add to the transmuted Social Studies score (see Appendix 2) one-half of the English score. The sum of the two would constitute the net or final score.

English was marked on Question I only. The schedule is shown in Appendix 2.

The issue in respect of the English component becomes critical at the passing-failing point, i.e, near the 50 per cent net score. An examination of the 315 cases shows that 27 candidates were lifted from failure to pass on the strength of their English scores. That is to say, they made less than a pass mark on Social Studies, but were passed by virtue of relatively high marks in English. The following illustrations will serve to make the issue clearer.

Candidate number 336 presents the following record:

Social Studies transmuted score, 38. This would give him a percentage score of roughly 45 on the basis of Social Studies alone. (Failure.) His mark on English, however, was exceptionally high, viz., 27. This mark allows him to pass with a net score of 51.

By way of comparison let us consider his immediate neighbor who presents the following record:

Social Studies transmuted score, 37; English Score[1], 25; net score, 49%. a single mark short of the required pass mark of 50% required for matriculation.

The figure, No. 14, that follows, illustrates the distribution of marks on the percentage raw score in Social Studies 3. The total raw score was changed to a percentage basis before the diagram was constructed. Suppose a student wrote a perfect paper, his raw score would be 130. The English was marked on a basis of 85 per cent for Social Studies and 15 per cent for English. The percentage scores in Figure 14 represent the percentage of the total raw score that the student actually obtained.

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[1] In actual practice the English mark added here is "12" and not "12.5."

Figure 15 illustrates the distribution of marks for the English scores. As an aid to comparing them, these scores, too, were changed to a percentage basis. In Figure 16 I have placed the column diagram for the total percentage raw score over that of the English percentage score. The distribution of each can thus be more readily obtained.

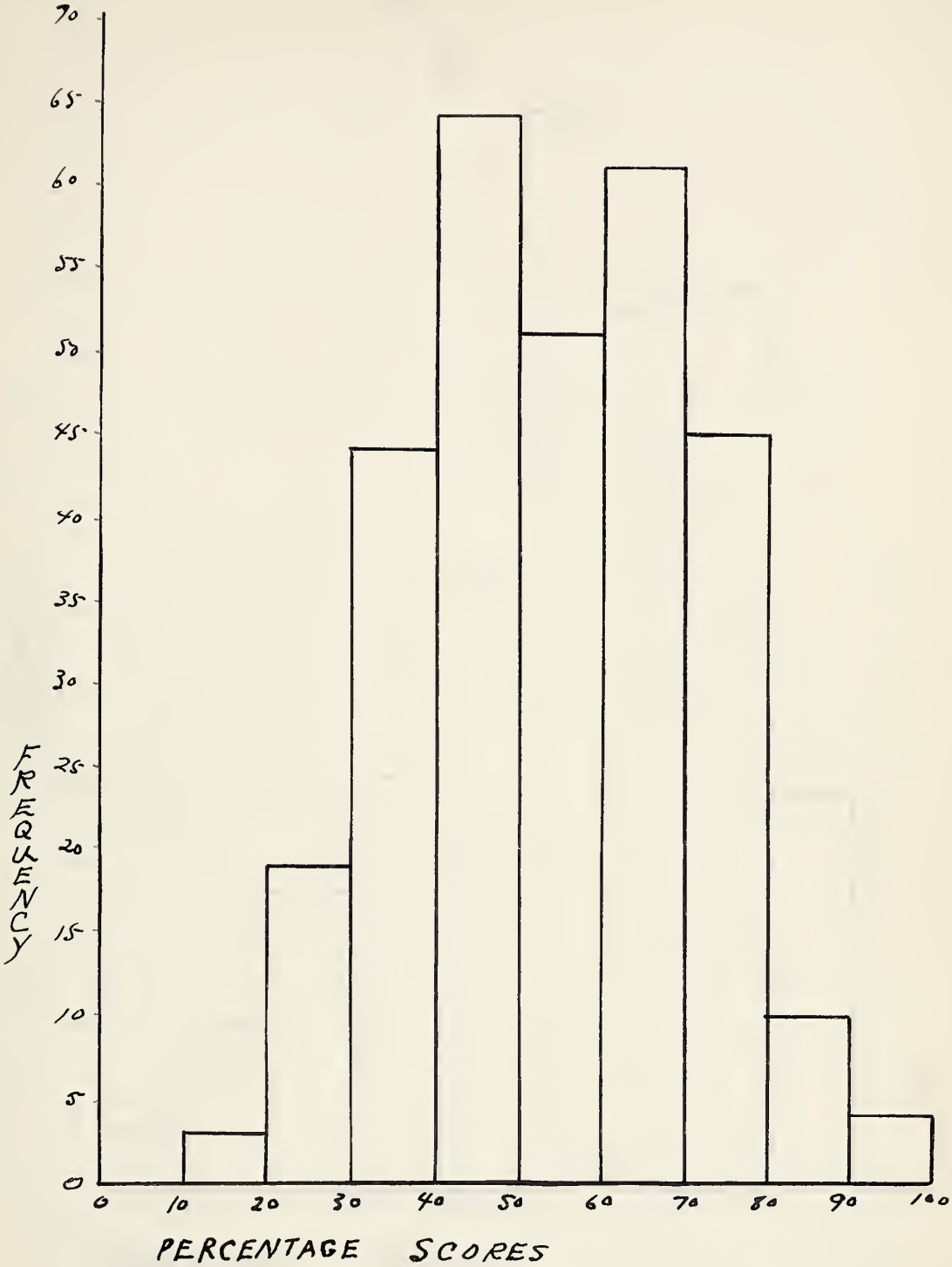

Figure 14

Raw Score[1] for the Total 315 Cases.

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[1] Raw Score here was reduced to a percentage basis.

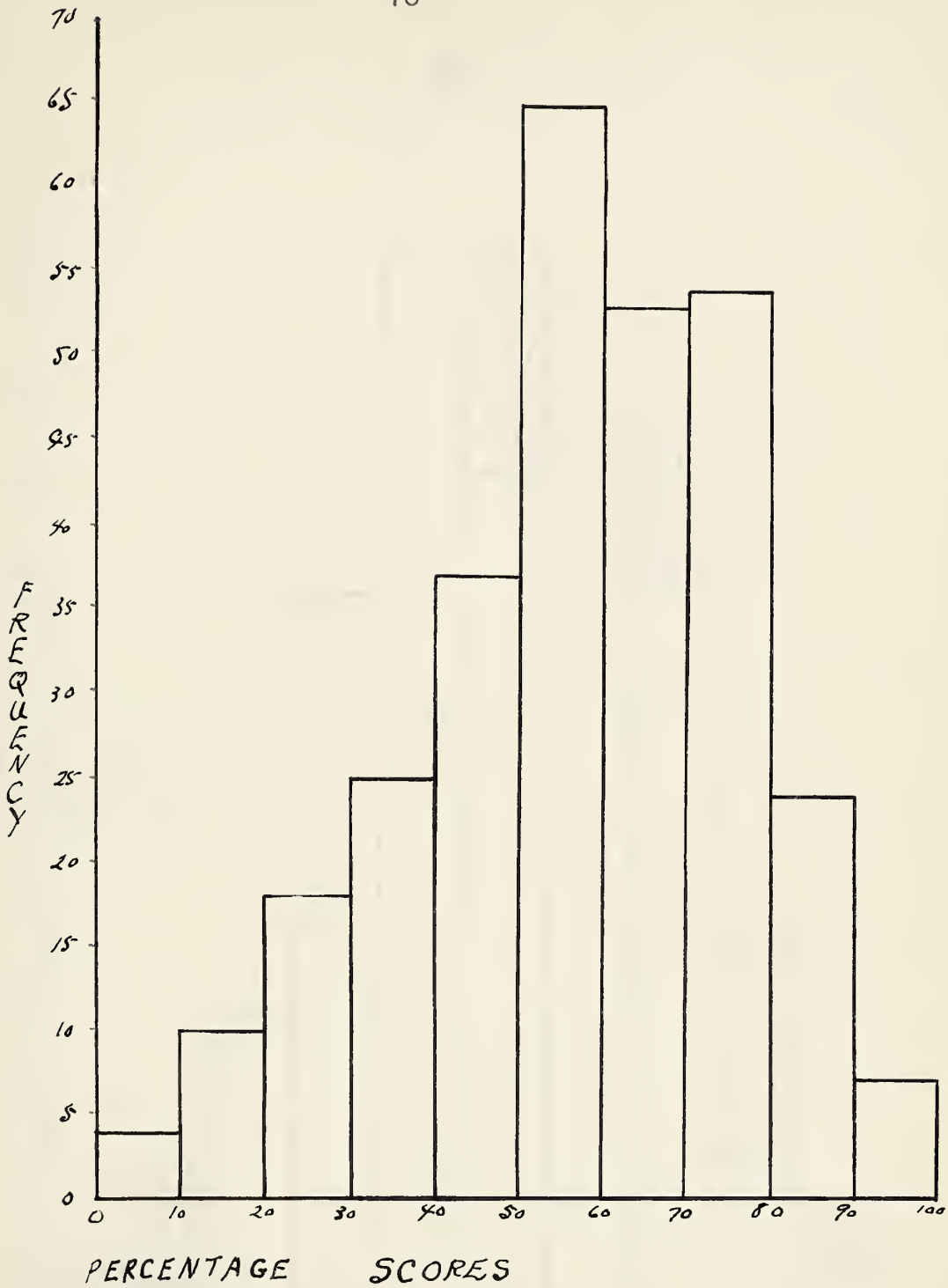

Figure 15

Percentage Score for English.
315 cases.

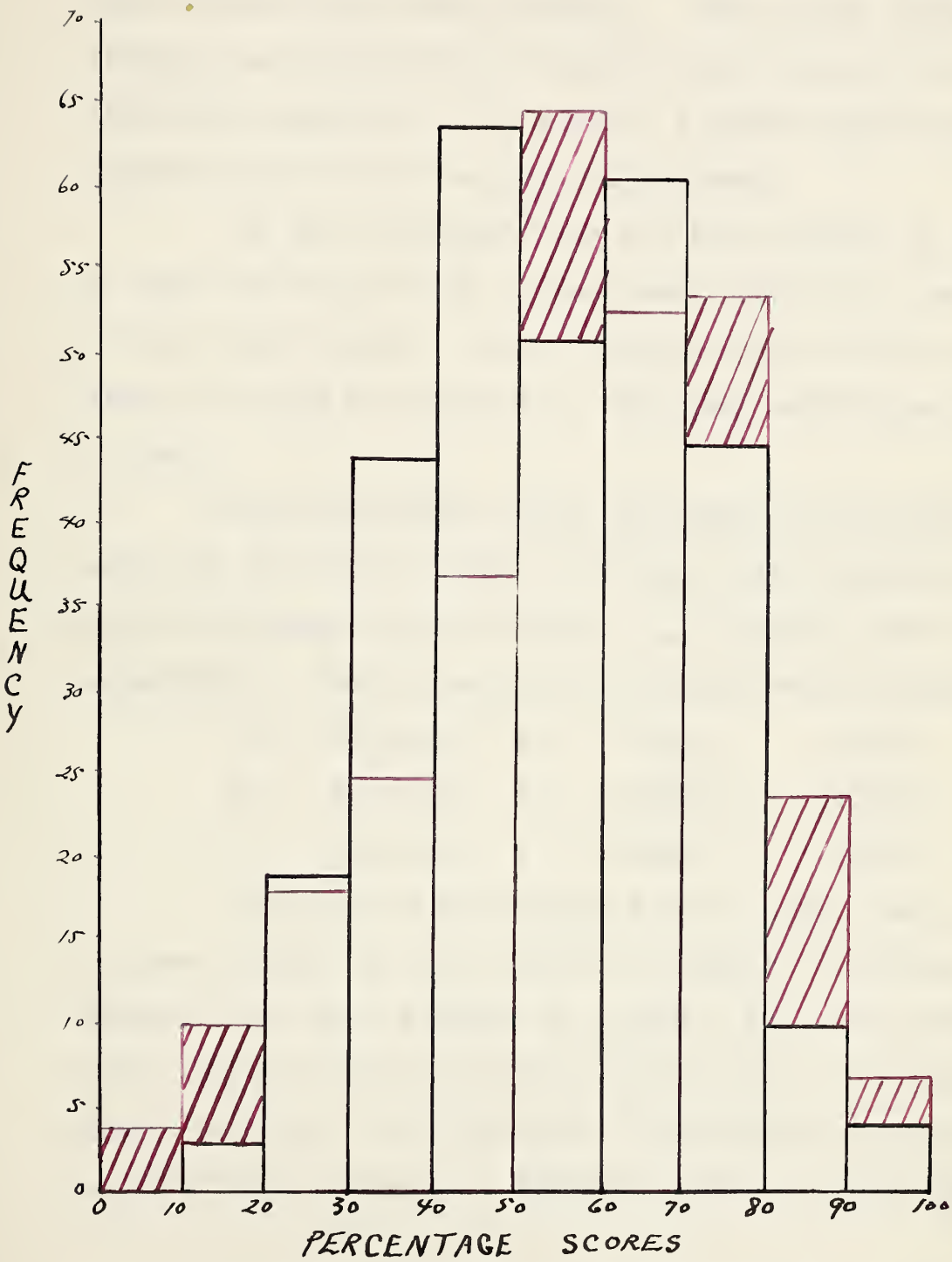

Figure 16.
Comparison of Total S.S. Percentage Raw Scores with English Scores.

ENGLISH PERCENTAGE SCORES.
S.S. 3 PERCENTAGE SCORES

The column diagram illustrating the distribution of marks for the raw score of the 315 cases shows the distribution to be nearly normal. The diagram illustrating the distribution of English marks seems to be noticeably weighted on the right. A smooth curve superimposed over it will be positively skewed.

In the raw scores[1] for the total number of cases we find that 54 per cent of the cases made 50 per cent or over (raw score). On the English score for the total number of cases 64 per cent of the cases made 50 per cent or over.

The correlations existing between the English marks and the Social Studies raw score were worked out. The three categories of students, A, B, and C, were run separately. The following correlations were obtained:

A.	175 cases,	r =	+.1453	±.0030
B.	94 cases,	r =	+.1220	±.0060
C.	36 cases,	r =	+.4040	±.0093

It might seem strange at first sight that on two such closely allied subjects as English and Social Studies there should appear so slight a positive correlation. My own feeling in the matter, by way of explanation, is this: It is true that those who do well on Social Studies do well on English. But it is also true

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[1] Figure 14, page 75

that those who do poorly on Social Studies may also do well on English. Further, in this case the Social Studies is tested at the Grade XII level. The English, I believe, is being tested at the Grade VIII level--punctuation, spelling, etc. In one hundred papers examined at random it was found that 79 had suffered by the loss of the whole 15 marks allowed for punctuation. That is to say, 79 made nothing at all on punctuation. This loss of 15 marks yields a loss of 4 on the net score. This result naturally raises the question whether English should be marked at all on an examination of this type. Even if it is proved desirable that English should be marked on selected subjects, I believe that the above result shows that punctuation is weighted rather heavily. The same may be said for some of the other items of the English score card.

It is reasonable, too, to suppose that students of foreign extraction would suffer most heavily on a marking technique of this sort.

In any case the whole scheme seems to fall short of its avowed objective. In no other consciously selective process in our every-day affairs is a man's achievement in one skill "measured" and rated by his achievement in some other skill, separate and distinct, even though closely allied.

If English is to be marked each year on some other selected subject, it would appear reasonable that the resulting score should be added to his English score. Since English is a compulsory subject no

injustice could possibly result from reporting the resulting mark where it belongs.

Nor can I see any validity in the argument that this off-side English score must be utilized as a means of exerting pressure on teachers to teach English in all subjects. The fact is that English marked in this manner must always remain at the Grade VIII level. The High School student by the time he has reached Grade XII has in a great number of cases learned to write within his own capabilities. Indeed, it sometimes happens that the brightest student, whose vocabulary is growing rapidly, will use, in an essay of this sort, a greater number of words he cannot spell than the duller student who by Grade XII has retired on a very comfortable capital of everyday words.

Such being the case I am led to conclude that yearly marking of English on a selected paper other than English itself in all probability will not serve to exert pressure on the teacher to teach English in all his other courses. If the Department insists--and rightly so--that English must be taught in all courses, it would appear that we must depend largely upon the professional integrity of the teacher to see that this is done.

CHAPTER VII

THE THREE CATEGORIES

The marks of 305 cases were grouped under their respective categories of A, B and C, corresponding to the placements[1] at the end of Grade IX. A frequency table was drawn up to show the distribution of the raw scores in each category and a column diagram[2] illustrating the distribution for each category was then constructed.

Other statistical data essential to an adequate understanding of the achievement of each of these categories were calculated, and it may be advisable at this point to offer a word of explanation concerning the statistical measures that comprise these data.

The mean simply refers to the ordinary average; the median represents the middlemost score after the series has been arranged from lowest to highest. It is such that there are as many scores above it as there are scores below it. The mode is the scale value at which the frequency curve is the highest. It may be described as the most "stylish" mark. All three of these forms, viz., mean, median and mode, are known as measures of central tendency.

The range is the difference between the

1 See p. 10 above.
2 The information supplied by a diagram of this type is explained on. p.29, above.

highest and lowest scores. I have set down here the range limits as being more comprehensive to the average reader. Q_1 represents the 25th percentile, or lower quartile. This means that 25 per cent or one quarter of all the scores fall at or below this point. Both these measures, viz., range and lower quartile, indicate the degree of dispersion or scatter of the scores.

The measures of central tendency were calculated for the A category and found to be as follows: Mean, 78.8; median 77.2; mode, 77.0.

The measures of dispersion calculated resulted as follows: Range 76 (30-115); first quartile 61.3; standard deviation 16.76; percentage passed, 79.0.

There were 175 cases in the A category.

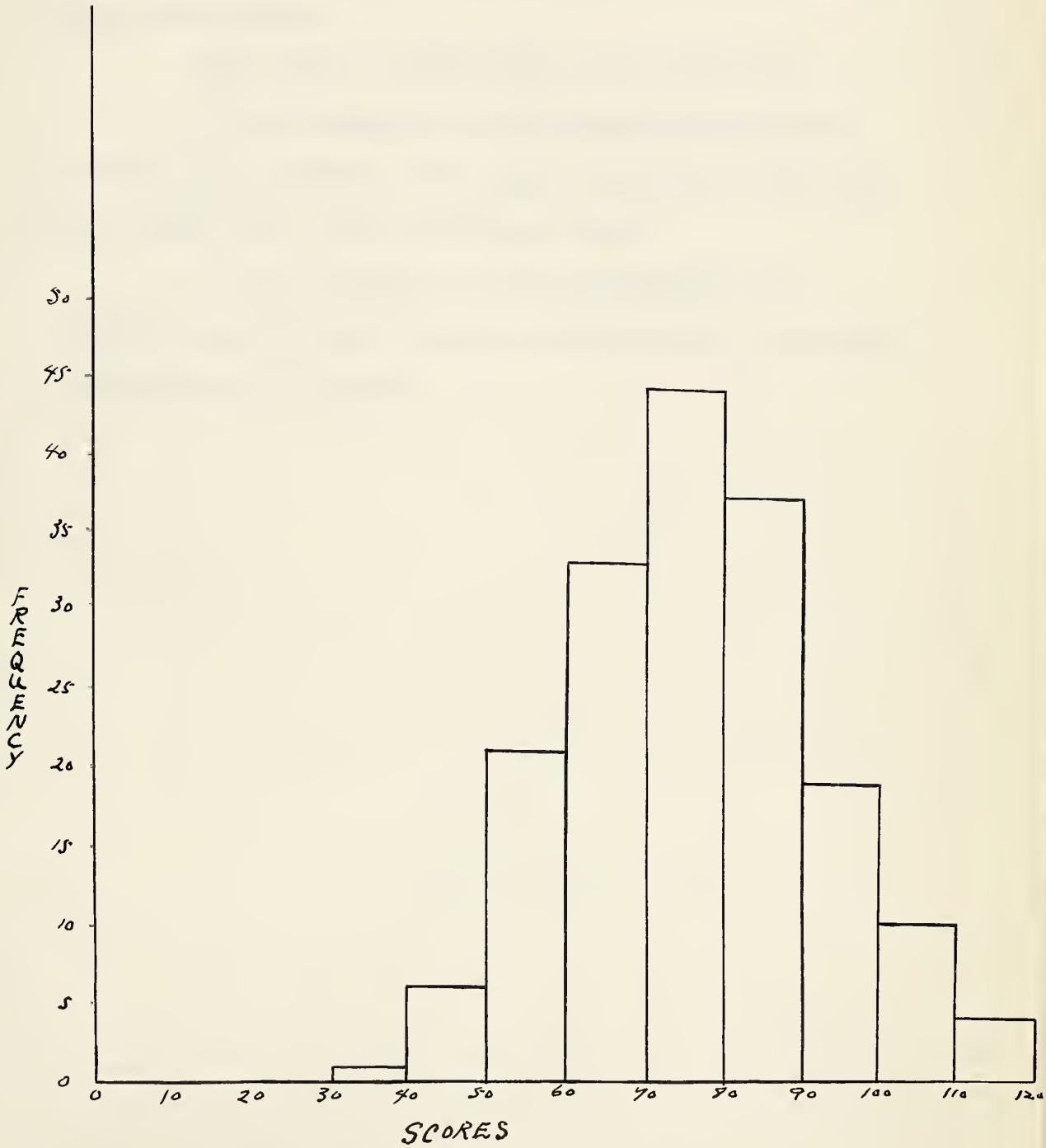

Figure 15.

Distribution of Scores for "A" Category.
175 cases.

In the "B" category there were 94 cases. The tabulation of the raw score yields the following statistical data:

Mean, 60.0; median 60.7, and mode 62.5.

In the measures of dispersion calculated, the following results were found: standard deviation, 15.0; range, 72; first quartile, 51.0.

In the 94 cases of B's considered, 42.5 per cent achieved the minimum matriculation requirement of 50 per cent or over.

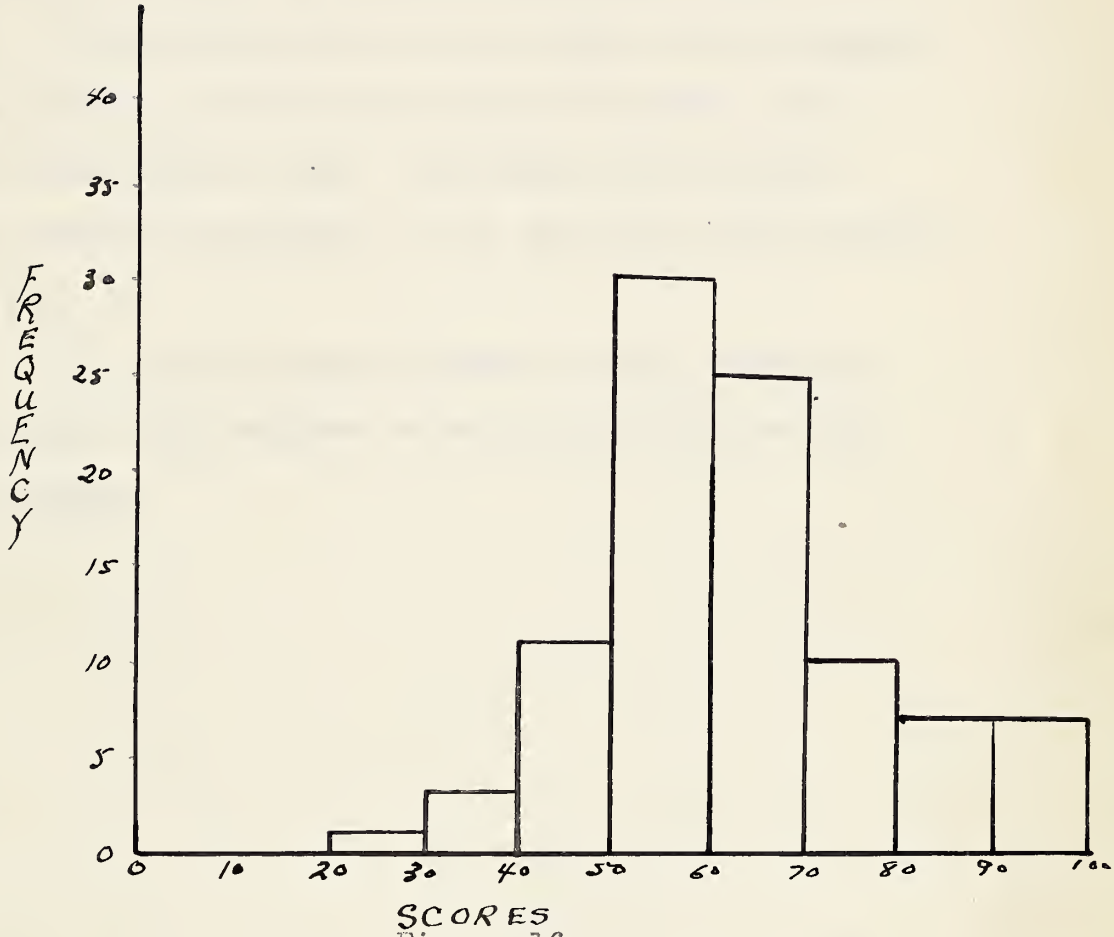

Figure 16

Distribution of Scores for "B" Category. 94 cases.

In the "C" category there were 36 cases. The frequency table based on the distribution of raw scores in this category gives the following measures: mean, 63; median 53.3; and a mode of 65. This distribution as seen from the accompanying diagram, proved to be almost bi-modal, with the lower mode at 45. The range is 40 (35-84); the standard deviation, 11.5, and the first quartile is 41.

Of the 36 cases examined in this category, 30.6 per cent achieved a pass mark of 50 per cent or higher.

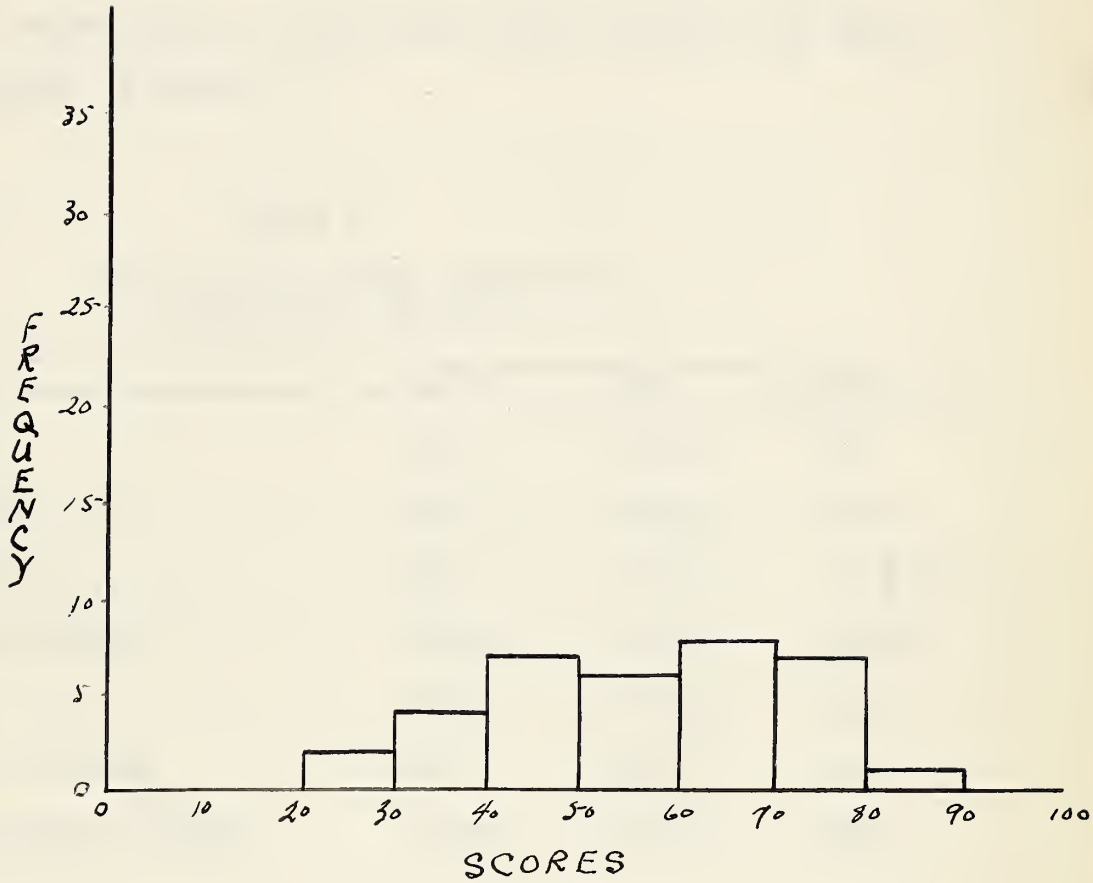

Figure 17

Distribution of Scores for "C" Category. 36 cases.

To give a more complete understanding of the relative achievement in these three categories I have summarized in the Table which follows the data referred to above.

TABLE VI

DATA OF THE THREE CATEGORIES
(S.S.3 Raw Score)

	A's	B's	C's
Mean	78.8	60.0	63
Median	77.2	60.7	53.3
Mode	77.0	62.5	45 & 65
Range Limits	30-115	27-99	35-84
Q_1	61.0	51.0	41.0
No. of Cases	175	94	36
Percentage Passed	79.0	42.5	30.6

Perhaps it would be well to note here that the average reader will be most interested in the last item of the above table, and this item I have illustrated by the three bar graphs which comprise the following figure.

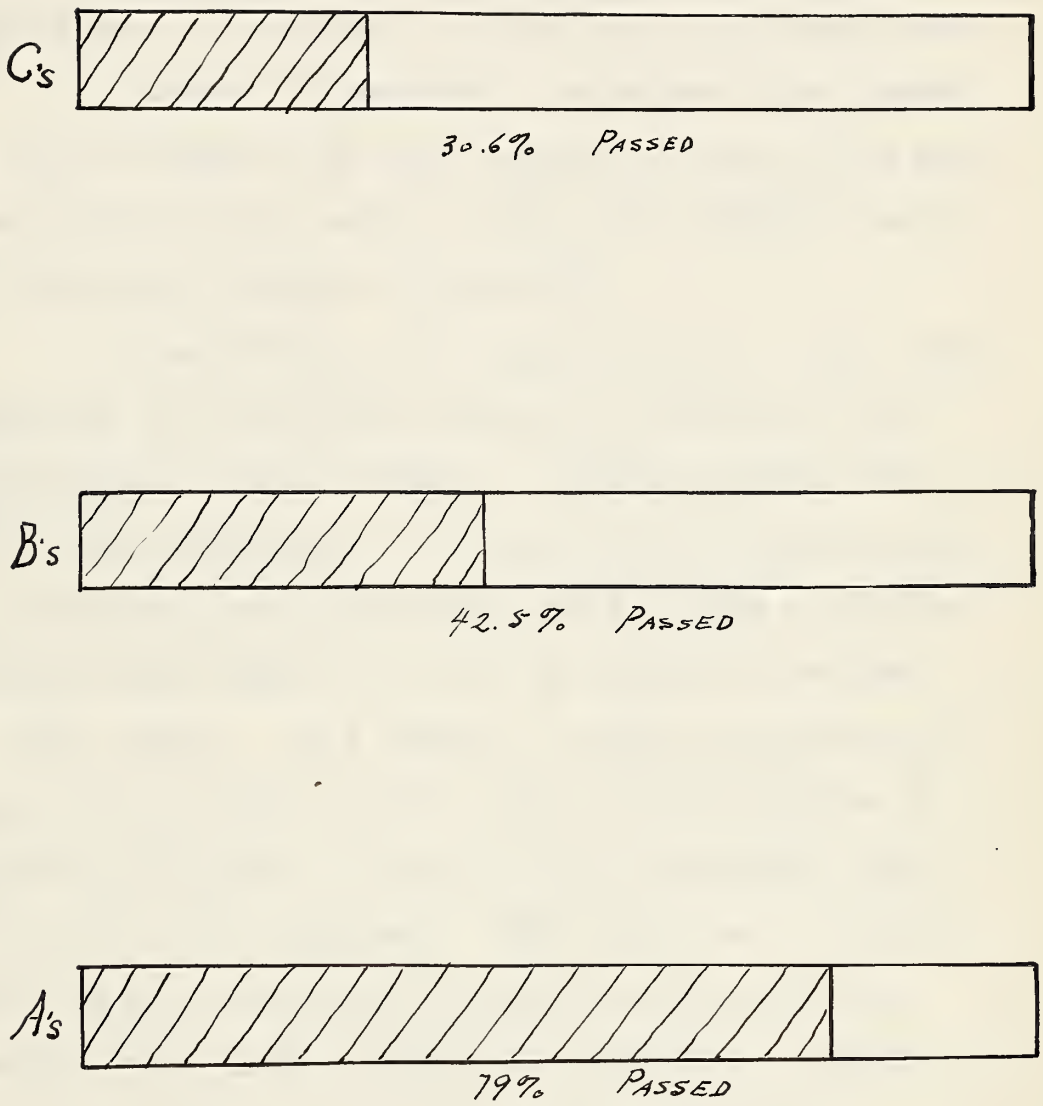

Figure 18

Bar Graphs Showing Percentage Passed[1] in Each Category.

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[1] 50% or over.

All the data involving the "A" group indicates that the grading at the end of Grade IX was a justifiable procedure. Indeed, this same observation may be made for each of the two remaining categories.

In the "B" category, the number which passed is not as large as we might expect in view of the fact that almost 7- per cent of these same students passed in the Social Studies of Grade IX.

In collecting the original data for this investigation, the cases were chosen at random from the departmental files,--rather, I should say that the very great percentage of my cases were so chosen--but it was found that this method did not give a sufficiently large class of C's for an adequate treatment of this group. In a number of cases it proved necessary to go back over the files for the purpose of selecting C's only. Even with this procedure only 36 cases of C's resulted. This leads me to believe that the C's throughout the Province constitute a smaller group than is generally supposed. However, the exact number in each category for the whole Province was not readily available at that time and the above supposition must only be accepted as such.

There is the further factor to be considered, viz., that the "C" category would suffer most severely from the "culling" process that takes place in the years from Grade IX to Grade XII, and possibly this factor more than any other would account for the paucity of C's in Grade XII.

In any case, the group showed a considerable improvement in the three years between the Grade IX and Grade XII examinations. Whereas in Grade IX only 16 per cent of the C's passed in Social Studies, there was a relatively large percentage of passes, 30.6 per cent, in Social Studies 3.

I might pount out here that such progress eminently justifies the "C" student "holding on" till the end of Grade XII.

The information supplied by the preceding pages may prove misleading if we do not take into consideration the fact that under the revised course of studies there is more than one kind of "pass."

Taking the matriculation pass mark of 50 per cent, the relative standings were as follows:
Per cent passed: A - 79%; B - 42.5%; C - 30.6%.
Under the revised course a mark of 40 per cent in this Course gives the student <u>five</u> credits. If we look at the "revised" pass mark, then our relative

standings appear as follows:

Percent passed (for credit): A - 95; B - 72.6, C - 44.4.

This new "pass mark" allows the C's - and indeed students of other categories as well - to have a new low aim. Furthermore, in some of our larger schools the "C" group is a class set apart and marked for a sort of specialization in the manual arts and other non-academic options. They are therefore slighted to some extent in an academic way and it is just possible that comparisons with other groups of the kind here set down do not do them full justice.

CHAPTER VIII

OTHER STATISTICAL COMPARISONS

It was thought advisable to take our 315 cases and investigate their records in the Social Studies of Grade IX and in Social Studies 1 and 2. We shall thus be able to see how each of our cases fared in the other three courses, and compare, when that is possible, the test standards that seem to exist in each of the four courses in Social Studies.

The Social Studies net scores in Grade IX yield the following statistical data. The 305 cases show a range of 66(22-88). The mean is 57 and the mode 55. The median score is 56.1. The first quartile falls at 50.2. Though the range extends to an upper limit of 88, only <u>five</u> subjects achieved a mark anywhere in the 80's.

Of 67 students who failed in Social Studies of Grade IX, 23 passed in Grade XII Social Studies. In the "C" group, 30 out of 36 subjects - 83.3% - failed, and of this large number failing the Social Studies of Grade IX, only <u>seven</u> passed in the Social Studies of Grade XII.

In this connection we must remember that quite often it is the Social Studies in Grade IX that places a student in the "C" category. When this is so, we might reasonably expect the student to continue weak in this subject throughout his High School career.

The correlation between the Grade IX scores in Social Studies and the corresponding raw scores on the Social Studies of Grade XII is +.7100. This high positive correlation indicates that the same or very similar types of achievement are being measured in Grades IX and XII. If my supposition above[1] is correct, viz., that there is only a single objective being measured to any extent, the high positive correlation would be readily explained.

Grade X Recommended Marks

When we turn to the recommended marks in Grade X we find that the range is very greatly reduced and that its lower limit is considerably above the lower limit of the usual range for any class writing a departmental test.

This restricted range is in fact what we might well expect to find. The bulk of the subjects are from the smaller schools and in dealing with smaller groups of students the tendency is to shorten the range. Even in one of our largest city High Schools, however, it is noted that in the recommended marks of Grade X no mark of the C's went below 40 and no mark of the A's went above 83. In another large city school it is found that in Grade X no mark falls below 60.

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[1] See p.67.

In the distribution of marks in Grade X the mean is 66.5; the median 67; and the mode is 65. The range is 40-100 and the first quartile is located at 56.3.

The correlation between the Grade X recommended marks and the raw score on Social Studies 3 is +.6480. It would appear from this that even though the recommended scores seem to be the result of closely controlled marking, the marking is controlled by some generally accepted standard. That is to say, that although in comparison with the departmental scores the recommended marks seem to be extremely high, the teachers do , on the whole, give the highest marks to those students who do eventually prove their superiority when submitted to the more severe province-wide standard.

Grade XI Recommended Marks.

The Grade XI recommended marks have a mean of 73.3 and a median score of 63.2. The range is 40-90 per cent. In this class 94 per cent of the cases made 50 per cent or over, or, taking 50 per cent as the pass mark, we may say 94 per cent passed.

In Social Studies 2, of course, a mark of 40 per cent allows a student to get full credit for the subject and go on to the work of Social Studies 3. Considered on this basis the Grade XI recommended marks contain no failures . That is to say, there was no one in this class of 305 cases who made under 40 per cent. In the "C" category the recommended marks for Grade XI, with a range of 40-70, have a mean of 54.3 per cent.

An inspection of the distribution tables[1] would seem to indicate that there is a wide variation in the standards of various schools.

In one of the smaller schools ("W" on the distribution table), five cases picked at random show a range of 60-70 in the recommended marks of Grade XI. The same net scores of the same subjects in Grade XII have a range of 31-56. Another small school, picked at random ("Z" in the Table), has a range of 60-70 in the recommended marks of Grade XI, but the net scores of Grade XII have a range of 35-40. These observations I believe to be typical of a fairly large percentage of the schools recorded, and they give rise to the following questions:

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[1] Appendix 1.

1. Is the standard teachers set for themselves in the marking of Social Studies 2 lower than that set by the Department for Social Studies 1 and Social Studies 3?

2. Is there some attempt on the part of teachers to measure a different set of values than those measured by the departmental examinations?

The obvious answer to Question 1 is "Yes", but I believe in fairness to the teachers we must first ask ourselves why the standard appears to be lower, and, secondly, give some consideration to the possible answers for Question 2.

With the new techniques recommended by the department for teaching the Social Studies it may, and often does, happen in all the Grades, that different schools may have in reality very different courses in Social Studies. A teacher, then, testing achievement in knowledge and understanding of the course taught by himself will in the very nature of the case have a different standard than a central examining body which tries to measure the achievement in all the courses taught by all the teachers in the Province.

The different standard, then, I believe to be unavoidable and not of itself undesirable. A possible undesirable feature, however, would be this: suppose a teacher, following his own standards of achievement, ends his term with a number of students havming marks, shall we say, of 35. A neighboring teacher, following his own standards, turns out a similar number of students with marks of 55. Quite obviously, the students who were submitted to the more severe standard have been done an injustice. A close inspection of our table reveals the fact that teachers avoid this injustice by giving no marks under 40 per cent. It is understood, of course, that for practical purposes a student making a Social Studies 2 mark of 55 has no advantage over the student making 40; i.e., insofar as the credits are concerned.

Considering our second question, I believe that it is quite possible, even likely, that our teachers are making an honest effort to measure values other than those measured by the Department in Social Studies 3. It is quite noticeable, too, that the teacher's recommended marks in Grades X

and XI have a higher positive correlation with the scores of Grade IX than with the scores of Grade XII. This higher correlation I believe to be a result of an attempt on the part of the teachers to evaluate achievement in some of the objectives of the revised course that have been so far untouched by the official test of Grade XII.

Summary of This Chapter

For the reader to whom figures speak louder than words, I have summarized the statistical data of this chapter into the table which follows; and for the reader who prefers his facts decently clothed in the mantle of deduction I have taken the liberty of adding a word of explanation.

The statistical measures reported in the following table, with the exceptions to be noted, have all been referred to above.[1] Q_3 represents the third quartile. It is the point in the distribution such that 75 per cent of all the cases lie at or below ~~that~~ it. Q is the quartile deviation. It is calculated from the following formula: $Q = \frac{Q_3 - Q_1}{2}$, and actually measures the average distance of the two quartile points, Q_1 and Q_3 from the median.

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[1] Pgs. 81 ff.

The standard deviation [1] is possibly the most significant of the measures of dispersion used in this table and gives a fair idea of the degree of dispersion or scatter of the scores about the central tendency.

TABLE VII

SUMMARY OF STATISTICAL DATA

	IX	X	XI	XII [a]
Mean	57	69.5	73.3	52.9
Median	56.1	67.0	63.2	51.6
Mode	55	65	65	65
Standard Deviation	10.0	11.5	10.5	11.41
Range Limits	22-88	40-100	40-90	15-95
Q_1	50.2	56.3	51.7	45
Q_3	61.4	71.0	71.5	60.8
Q	5.6	7.3	9.9	7.9
Percentage Passed	78%	95.8%	94%	62%

[1] This measure is not readily reducible to a verbal definition; for a complete understanding the reader is referred to the "Fundamentals of Statistics," by L.L. Thurstone, p.101.

[a] Based on Net Scores.

In the above table the calculated measures, for the most part, follow quite closely the normal distribution and as such require no special comment. The data for Grades IX and XII are based on departmental examinations and those for Grades X and XI are based on the teachers' recommended marks. Here it is significant to note that the departmental examinations result, quite consistently, in lower measures of central tendency. The range limits show that teachers consistently refuse to give a final mark below 40 per cent, but whether this is the result of sense or sentiment--the sentiment of teachers or the sense of the revised course, I am unable to say.

The percentage passed in the recommended marks, as well as a comparison of the respective modes, would indicate that teachers are evolving their own standards of achievement, inconsistent as yet with those of the department, but consistent within the teaching profession and from grade to grade.

CHAPTER IX

CONCLUSIONS AND SUGGESTIONS.

A. Conclusions

In the darkness of the present hour when civilization itself is straining every nerve and sinew to retain the priceless privilege of change, he who dons the armour of reform should know the windmills from the giants. In the restless realm of Education is it doubly true that the reforming knight-errant must tread warily lest he find himself in mortal combat with the harmless windmill while the dreaded giant escapes.

I must remind the reader, too, that this is a minor study and any conclusions drawn thereform must as a consequence be accorded minor importance. On the other hand, the nature of the study demands that such conclusions as do arise in the mind of the writer must be expressed. The reader isfree to modify these conclusions to his heart's desire, or indeed to draw any number of different conclusions.

The Roman numerals in the left-hand margin refer to the specific chapters whence my conclusions are derived.

I. 1. Measurement has always held an important place in the educative process.

2. The importance of educational measurement has become so great that it must be considered an integral part of the educational program, and not a mere annual rite to round off the school year.

II. 3. Individual schools vary greatly in the results obtained on the Social Studies 3 examinations. In a number of cases the results were so poor that I am led to believe that either the teacher concerned misinterpreted the course or consciously prepared his students for a different type of examinations

4. The results show no significant variations between the different types of schools studied. Good and bad results seem evenly distributed among the schools of every type studied.

III.5. Question number I(c) served no useful purpose as a test item. It possibly served a useful purpose as a "feeler" to decide the need for incorporating such material into the course.

6. The questions most readily associated with their respective topics in the course outline were anwered best by the students.

7. None of the test items was highly efficient in discriminating between "those who know and those who do not know." The index of discrimination is consistently low and indicates that the function of discrimination was not adequately performed by the test.

8. An analysis of Question III indicates that a relatively large number of our Grade XII students, approximately twenty per cent , have not developed beyond the 'howler' stage. At least one 'howler' was found on that percentage of papers.

9. The C's give a better account of themselves on Current Events than on any other topic of the course.

10. The less important items of any topic function better as a means of discriminating between the best and poorest students then do the more important items of the same topic.

IV. 12. When examiners, i.e., those who set the paper, depart from the outline of the course and test for information not specifically indicated in the outline, students seek refuge in other options and thus defeat whatever purpose the examiners had in mind.

13. Where a questions consists of a number of sub-questions, in justice to the student all these sub-questions should deal with the same topic of the course.

V. 14. A sufficient effort was not made on this test paper to defeat the 'crammer.'[1] This is merely another way of saying that the test followed too closely the pattern of the old History 4 test.

15. A concomitant conclusion to the above is that the test should not favour those students whose study is confined to either the basic test, (McAuliffe), or the Social Studies 3 manual, or both.

16. Closely associated with the above is the conclusion that the test does not favour the student whose preparation consisted of extensive reading from the indicated references.

17. One topic of the outline, viz., Topic II, was unduly weighted in the sampling, to the neglect of others. It is claimed by some teachers that this is not an important consideration; but I believe it would be more satisfactory to students and teachers alike if the examination values[2] corresponded more closely to the suggested preparation time.

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[1]The reader is referred to p.58, above.

[2]"Values" is used here in the sense in which it is used in the left-hand margin of the examination paper.

18. The ability to interpret historical material is an important aspect of the course and claims a more important rating on the test. The attempt made to measure it, viz., in Question XIII, appears inadequate insofar as the marking of this question was of necessity highly subjective.

VI. 19. It seems unfair that a student's ability in English should determine his standing in Social Studies. The abilities involved are separate and distinct and any attempt to combine them for the purpose of measuring achievement in each offers so many difficulties that an injustice to certain types of students is bound to result.

20. It does seem to the writer desirable that English should play an important role in the presentation of <u>all</u> courses, but that this result might be achieved by relying upon the professional integrity of the individual teacher to see that the Department's wishes are carried out.

VII. 21 Each of the three categories achieved results that justify their relative grading at the end of Grade IX.

22. The C's considered as a class seem at first glance to have achieved more progress in the years from Grade IX to Grade XII than did the B's. However, this result is no doubt due to the fact that a large percentage of the C's would be culled out before reaching Grade XII, and those remaining would be a somewhat selected group in this Category.

VIII 23. Students who fail in the Social Studies of Grade IX appear to have a fair chance of passing the Social Studies of Grade XII.

24. Although the Grade X and Grade XI recommended marks are much higher than the corresponding departmental marks in Grades IX and XII, the high correlations obtained indicate that the teachers' marks do succeed in giving the student his proper rank, or relative position, in the class.

25. There is the possibility that teachers are in some degree attempting to measure some of the objectives of the revised course. As yet we have no adequate testing technique to measure these objectives, and the attempt to measure them can only find expression in higher marks.

B. Suggestions for Improvement.

It seems possible that some improvement in our official testing program might be achieved if there were a definite effort to measure more of the outcomes of Social Studies instruction. The paper that forms the basis for this study is divided into three parts, viz., A, B and C. Some such division, slightly extended, would serve admirably for the suggestion I have in mind. The basic objective would still remain a body of information. This objective would be tested in Part A. By using the objective test technique the whole course could be sampled very efficiently in less than one-half the time demanded by the present essay-type paper. Suppose we then take a limited number of objectives from the suggested list,[1] and attempt to measure the achievement in each. For purposes of illustration let us take the first three referred to above.[1] These objectives, I believe, could be adequately tested by the procedures developed by Marion Clark for the investigation[2] carried on by the Commission on the Social Studies in the Schools, sponsored by the American Historical Association.

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[1] See pages 63 and 64 above.

[2] Reported pp.302 ff in "Tests and Measurements in the Social Sciences." Kelley and Krey.

These objectives would be tested by parts B, C and D of our proposed paper.

"Inasmuch as coherent and cogent composition is still one of the most widely used, as it is one of the most valuable skills in social science, it would seem essential to continue to use the essay-type examination, if for no other reason than to afford practice in this skill."[1] In view of the fact that the experts in the Social Studies field seemed to be in agreement on this aspect of our problem it must not be neglected in a proposed revision of the testing program. An effort to measure this skill would comprise part E of our paper. Since only a small percentage of our secondary school graduates will ever have need of preparing a longer type of composition on any of the topics concerned, it would seem to be the better plan to measure the above-mentioned skill by a series of paragraphs. This would save time and offer a wider scope for this aspect of the test.

The above-mentioned suggestions, though sketched of necessity in a very general way, indicate, I believe, a direction that offers the possibility for some worthwhile improvement.

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[1] Op.Cit. p.100.

APPENDIX 1.

DISTRIBUTION TABLE UPON WHICH THIS STUDY IS BASED.

School	Paper No.	Cat.	IX S.St.	I.Q.	X S.St.	XI S.St.	XII R.S.	XII T.S.	XII Eng.	XII N.S.
A	59	C	31	---	55	40	49	29	22	40
	62	C	38	---	50	50	51	31	16	37
	64	A	50	---	55	60	56	35	21	45
	72	B	33	---	50	55	61	40	15	47
	81	A	49	---	65	60	68	45	16	53
B	183	A	62	---	55	65	41	24	10	29
	184	C	31	---	46	55	36	21	3	22
	188	A	61	---	74	85	97	68	10	73
	190	A	61	---	85	85	73	49	6	52
	191	C	50	---	67	70	74	50	7	53
C	291	A	62	---	45	50	66	44	17	52
	292	A	72	---	75	60	85	58	6	61
	294	A	51	114	40	50	70	47	23	58
	295	B	56	85	50	50	55	35	17	43
	297	A	62	111	65	70	115	81	20	91
D	334	A	58	---	55	65	52	32	22	43
	335	A	66	---	65	60	58	37	25	47
	336	A	70	---	75	80	59	38	27	51
	338	A	66	---	55	55	67	45	21	55
	339	A	62	---	70	70	43	25	20	35
E	1148	A	60	---	55	80	76	52	24	64
	1160	B	51	---	60	70	33	19	22	30
	1170	A	57	---	80	70	80	55	5	57
	1184	A	82	---	75	80	77	52	11	57
	1192	B	45	---	50	45	51	31	17	37
	1343	A	68	---	55	75	63	42	18	51
	1265	B	52	93	65	70	62	41	3	42
	1276	C	44	104	54	55	57	36	6	37
	1291	B	49	104	50	55	54	34	7	37
	1300	B	55	---	60	45	41	24	19	33
	1311	A	69	---	65	65	71	48	18	57
	1322	B	59	---	65	70	90	62	24	74
	1347	A	63	---	70	50	77	52	20	62

School	Paper No.	Cat.	IX. S.St.	I.Q.	X. S.St.	XI. S.St.	XII. R.S.	T.S.	Eng.	N.S.
E	1358	B	55	127	60	60	50	30	15	37
	1366	C	42	---	50	60	27	15	17	23
	1378	A	79	---	85	85	65	43	3	44
	1383	A	64	---	85	80	67	45	26	58
	1394	B	64	---	60	70	82	56	13	62
	1402	A	67	---	75	75	67	45	19	54
	1409	B	65	---	55	50	62	41	23	52
	1422	C	37	86	60	50	61	40	5	42
	1426	C	49	---	60	40	48	29	15	36
	1436	B	61	87	60	65	69	46	13	52
	1453	C	38	---	60	55	46	27	19	36
	1467	C	47	---	60	60	63	42	18	51
F	577	A	78	130	80	70	104	73	23	84
	585	B	54	---	65	50	57	36	8	40
	601	A	73	---	65	65	79	54	15	61
	611	A	51	---	65	55	99	69	21	69
	623	A	58	---	60	65	81	55	14	62
	636	A	63	---	60	65	78	53	8	57
	657	A	67	---	55	70	74	50	12	56
	666	A	75	---	75	65	78	53	14	60
	675	A	65	---	70	65	70	47	18	56
	686	A	47	---	65	55	58	37	12	43
	698	A	66	---	60	70	74	50	23	61
	712	A	55	---	70	70	111	78	17	86
	726	A	50	---	55	55	52	32	17	40
	736	B	45	---	60	55	99	69	19	78
	748	B	50	---	55	55	45	27	20	37
	764	A	66	---	70	60	91	63	29	77
	772	A	74	---	50	60	79	54	13	60
	775	A	68	---	80	75	101	71	19	80
	776	A	48	---	60	50	86	59	22	70
	784	A	63	---	55	50	82	56	19	65
	788	A	72	---	65	55	89	61	14	68
	793	A	56	---	80	75	88	61	15	68
	798	A	74	---	60	75	94	65	20	75
	806	A	73	---	70	65	59	38	26	51
	810	A	59	---	70	80	71	48	18	57
G	1612	A	59	---	70	70	91	63	24	75
	1620	A	65	---	60	55	106	74	22	85
	1628	A	64	---	70	65	60	39	20	47
	1638	A	49	---	65	60	55	35	21	45
	1641	A	69	---	70	70	87	60	26	73
	1642	C	43	---	65	50	76	52	15	59
	1645	A	54	---	55	50	76	40	15	47
	1649	B	50	---	55	50	68	45	15	52
	1615	B	55	70	65	50	54	34	21	44
	1616	A	50	115	65	60	78	53	22	64

School	Paper No.	Cat.	IX S.St.	I.Q.	X S.St.	XI S.St.	XII R.S.	T.S.	Eng.	N.S
G	1616	A	50	115	65	60	78	53	22	64
	1621	A	51	124	75	80	75	51	21	61
	1625	B	54	109	55	55	74	50	22	61
	1626	A	75	117	85	80	89	61	15	68
	1630	A	59	96	65	60	68	45	17	53
	1632	B	48	103	65	55	87	60	16	68
	1634	A	59	114	60	50	74	50	15	57
	1635	B	58	109	70	70	85	58	13	64
H	1654	B	41	106	70	60	54	34	7	37
	1658	A	59	101	80	60	79	54	17	62
	1667	B	72	---	75	70	67	45	18	54
	1672	B	50	101	60	50	63	42	7	45
	1673	C	47	102	60	50	48	29	13	35
	1675	C	45	102	60	45	45	27	2	28
	1680	A	54	107	80	70	70	47	19	56
	1682	B	54	92	75	65	37	22	15	29
	1684	A	48	112	85	85	79	54	20	64
	1688	B	56	88	60	50	53	33	11	37
	1690	A	53	122	70	55	74	50	21	60
	1691	A	67	106	70	60	91	63	15	70
	1694	A	61	108	80	70	78	53	4	55
	1698	A	72	126	70	65	67	45	19	54
	1704	A	69	111	75	75	81	55	22	66
	1707	C	44	101	75	55	54	34	17	42
	1709	A	71	111	75	70	73	49	19	58
	1711	A	66	121	85	85	105	72	17	80
	1712	A	57	106	85	65	53	33	15	40
	1715	A	56	118	85	80	109	77	28	91
I	1869	A	48	95	70	45	66	44	24	56
	1863	A	63	A	80	80	94	65	17	73
	1858	A	46	A	85	65	56	35	23	46
	1852	B	50	B	75	65	76	52	7	55
	1847	A	70	C	85	70	50	30	16	37
	1839	A	63	A	80	70	72	48	18	57
	1834	B	46	B	85	75	65	43	21	53
	1828	B	60	--	85	80	43	25	17	33
	1824	A	80	C	85	70	77	52	7	55
	1816	B	51	C	80	70	68	45	17	53
	1812	A	88	A	75	70	71	48	18	57

School	Paper No.	Cat.	IX. S.St.	I.Q.	X S.St.	XI S.St.	XII R.S.	XII T.S.	XII Eng.	XII N.S.
J	1955	A	66	---	65	60	59	38	19	47
	1957	B	40	---	58	55	59	38	17	46
	1964	B	54	---	68	45	63	42	9	46
	1975	A	58	---	68	65	39	23	13	29
	1983A	A	59	---	75	70	49	29	9	33
	1993	A	50	---	78	55	75	51	22	62
	1996	A	69	---	74	85	74	50	14	57
	2000	A	68	---	90	85	98	68	19	77
	2006	A	61	---	82	80	54	34	15	41
	1995	A	63	---	84	80	75	51	9	55
K	2309	B	63	---	75	65	62	41	21	51
	2305	A	58	---	65	65	80	55	16	63
	2302	B	51	---	45	65	70	47	14	54
	2301A	B	42	---	55	60	56	35	11	40
	2295	A	51	---	75	75	84	58	14	65
	2293	A	61	---	65	85	87	60	22	61
L	2330	A	51	---	60	75	67	45	14	52
	2331	A	51	---	70	75	92	64	27	27
	2333	B	55	---	70	55	59	38	23	47
	2334	A	83	---	80	85	105	74	21	84
	2335	A	67	---	65	70	57	36	24	47
	2336	A	64	---	60	75	76	52	13	58
	2338	A	57	---	75	80	86	59	13	65
	2339	A	58	---	75	80	76	52	13	58
	2341	B	63	---	70	65	59	38	18	47
M	2480	B	36	130	62	68	97	68	23	79
	2483	A	68	---	80	77	96	67	19	76
	2485	A	59	---	58	74	93	64	21	74
N	2529	A	75	---	70	65	80	55	22	66
	2537	A	51	---	70	70	50	30	18	37
	2538	A	73	---	80	80	75	51	22	62
	2540	A	75	---	70	55	64	42	21	52
	2541	A	76	---	80	85	95	66	21	76
	2543	B	36	---	60	55	57	36	12	42
O	2611	A	73	---	90	80	63	42	25	54
	2618	B	53	---	60	70	86	59	24	71
	2581	B	55	---	75	65	72	48	19	57
	2582	A	53	---	70	70	84	58	11	63

School	Paper No.	Cat.	IX S.St.	I.Q.	X S.St.	XI S.St.	XII R.S.	XII T.S.	XII Eng.	XII N.S.
O	2584	C	57	---	55	45	35	20	0	20
	2585	A	65	---	90	85	95	66	25	78
	2586	A	65	---	60	65	51	31	18	40
	2588	A	76	---	80	75	81	55	24	67
	2591	B	63	---	65	55	57	36	15	43
	2593	A	56	---	80	75	91	63	23	74
	2594	B	51	---	60	60	50	30	11	35
	2596	B	58	---	60	65	93	64	14	71
	2598	A	65	---	80	80	108	76	23	87
	2601	C	59	---	65	65	79	54	13	60
	2606	C	48	---	60	50	53	33	18	42
	2608	B	50	---	60	65	65	43	24	55
	2609	C	48	---	65	55	44	26	18	35
P	4136	B	50	---	60	75	72	48	20	58
	4137	A	58	---	55	50	45	27	22	37
	4140	A	52	---	65	65	61	40	20	50
	4142	B	52	---	45	70	60	39	16	47
	4149	A	63	---	70	60	64	42	18	51
	4124	A	67	---	80	75	104	73	21	83
	4127	A	62	---	65	80	85	58	11	63
	4129	A	67	---	70	65	94	65	9	69
	4131	C	37	---	55	55	60	39	3	40
	4135	B	44	---	60	55	53	33	14	40
Q	4729	A	65	---	70	80	63	42	15	47
	4731	A	69	---	65	85	80	55	24	67
	4735	A	65	---	60	60	64	42	12	47
	4737	B	65	---	50	55	62	41	19	50
	4745	A	52	---	70	65	81	55	22	66
R	5694	A	53	---	80	60	62	41	12	47
	5698	A	60	---	100	65	87	60	8	64
	5703	A	57	---	90	65	76	52	22	63
	5709	A	86	---	100	80	115	81	21	91
	5701	B	51	---	70	60	79	54	16	62
S	6059	A	84	---	80	80	84	58	23	69
	6064	A	65	---	70	55	57	36	17	44
	6072	B	53	114	70	60	68	45	22	56
	6079	B	58	---	55	50	27	15	16	23

School	Paper No.	Cat.	IX S.St.	I.Q.	X S.St.	XI S.St.	R.S.	XII T.S.	Eng.	N.S
T	6180	B	6s	93	66	75	56	35	22	46
	6160	A	65	94	73	80	61	40	24	52
	6163	B	53	---	57	65	57	36	15	43
	6165	B	48	---	60	70	59	38	16	46
	6167	C	55	---	55	60	37	22	24	34
	6183	B	60	115	65	60	53	33	17	41
U	6381	C	41	---	60	55	41	24	19	33
	6384	A	69	---	70	70	85	58	23	69
	6390	B	48	---	55	60	54	34	14	41
	6398	A	54	---	60	70	80	55	12	61
	6402	A	56	---	55	65	68	45	11	50
	6372	A	84	---	65	70	77	52	16	60
	6341	C	44	---	50	60	51	31	15	37
	6347A	A	54	---	50	65	52	32	22	43
	6348	A	66	---	70	70	87	60	18	69
	6354	A	65	---	70	60	78	53	24	65
	6359	B	59	---	60	65	80	55	6	58
	6364	A	72	---	75	70	74	50	17	58
	6370	B	40	---	40	55	43	25	0	25
	6371	B	51	---	65	65	63	42	20	52
	6375	C	34	---	60	55	49	29	19	37
	6378	C	42	---	60	60	76	52	22	63
	6521	B	40	---	45	70	75	51	16	59
	6523	A	46	---	70	75	111	78	18	87
	6529	B	44	---	60	65	78	53	22	64
	6530	C	48	---	55	70	75	51	20	61
	6531	C	33	---	45	60	63	42	17	50
V	6769	C	47	106	60	60	64	42	9	46
	6771	B	50	102	65	70	51	31	7	34
	6774	B	44	93	55	65	41	24	15	31
	6777	B	49	106	85	65	53	33	17	41
	6780	A	76	105	85	60	70	47	19	56
W	5853	A	64	---	85	75	79	54	20	64
	5855	A	53	---	80	70	83	57	21	67
	5865	A	69	---	85	90	84	58	17	64
	5866	B	49	---	70	50	44	26	19	35
	5871	A	62	---	75	70	81	55	16	63
	5874	A	53	---	70	55	65	43	11	47
	5877	B	49	---	65	65	95	66	13	72
	5882	A	58	---	70	75	82	56	18	65
	5885	A	54	---	65	45	64	42	25	54
	5887	C	42	---	65	45	32	18	11	23
	5898	A	65	---	80	70	63	42	21	52

School	Paper No.	Cat.	IX S.St.	I.Q.	X S.St.	XI S.St.	XII R.S.	XII T.S.	XII Eng.	XII N.S.
X	7268	B	43	---	55	55	50	30	11	35
	7264	B	61	---	60	70	63	39	15	46
	7275	B	56	---	55	65	52	32	19	41
	7278	C	38	---	65	60	64	42	13	47
	7279	C	39	---	60	65	54	34	12	40
Y	7469	B	62	---	65	50	42	25	20	35
	7463	A	71	---	80	85	93	64	24	76
	7462	B	53	---	60	60	61	40	23	51
	7458	B	63	---	70	75	61	40	16	47
	7456	B	47	---	65	55	46	27	17	35
	7453	B	62	---	60	70	69	46	20	56
	7445	A	58	---	90	80	102	71	24	83
	7437	A	67	---	70	85	66	44	5	46
	7428	A	50	---	50	45	45	27	14	34
	7422	C	32	---	50	45	27	15	13	21
Z	3863	A	50	112	60	45	90	62	18	71
	3861	A	55	112	70	55	71	48	9	52
	3859	A	68	117	85	60	79	54	15	61
	3857	A	67	112	90	65	64	42	28	56
	3854	A	63	108	80	65	81	55	21	65
	3851	A	69	118	80	55	93	64	14	71
	3849	B	61	---	60	60	58	37	16	45
	3847	A	57	118	65	60	86	59	17	67
	3843	B	50	99	60	45	62	41	0	41
	3838	B	57	107	65	60	91	63	17	71
	3836	B	49	117	70	60	89	61	13	67
	3835	A	79	100	65	55	84	58	20	68
	3834	C	39	96	65	55	63	42	11	47
	3832	B	58	96	55	50	72	48	8	52
	3825	B	51	107	85	70	65	43	20	53
A.1	3874	B	70	107	75	50	50	30	10	35
	3877	B	47	96	50	50	40	23	5	25
	3875	A	69	125	85	80	65	43	25	55
	3886	A	71	109	70	70	59	38	19	47
	3891	B	42	117	50	55	61	40	25	52
	3892	A	69	115	75	75	76	52	25	64
	3896	A	51	111	55	60	65	43	16	51
	3897	A	74	110	70	70	62	41	15	47
	3908	C	53	103	50	65	67	45	22	56
	3909	A	61	111	75	70	69	46	15	53

School	Paper No.	Cat.	IX S.St.	I.Q.	X S.St.	XI S.St.	R.S.	XII T.S.	Eng.	N.S.
B.1	3473	A	77	---	70	60	92	64	16	72
	3476	B	52	102	50	55	58	37	17	45
	3480	B	51	106	55	60	48	29	10	34
	3485	C	50	103	45	50	76	52	11	57
	3493	C	47	99	45	55	84	58	19	67
	3500	A	68	111	50	60	86	59	12	65
	3505	B	48	110	50	45	45	27	7	30
	3512	B	53	104	40	40	52	32	9	36
	3517	A	58	125	65	65	79	54	11	59
	3522	B	47	97	50	50	80	55	27	68
	3528	A	79	126	60	65	84	58	22	69
	3537	C	22	98	40	40	72	48	8	52
	3545	B	38	---	45	50	39	23	16	31
	3550	B	54	87	65	60	99	69	7	72
	3556	A	54	109	60	50	47	28	12	34
	3567	A	49	120	55	70	75	51	25	63
	3575	A	65	---	55	65	62	41	10	46
	3586	B	59	97	65	65	73	49	11	54
	3593	A	79	133	80	70	89	61	13	67
	3712	B	42	107	65	60	64	42	12	47
	3703	A	68	---	65	55	58	37	22	47
	3687	B	51	---	55	55	64	42	16	50
	3676	A	61	118	70	65	83	47	21	67
	3660	A	52	103	60	70	100	70	3	71
	3644	B	58	114	60	60	56	35	21	45
	3638	A	57	118	65	55	80	55	13	61
C.1	1877						93	64	18	73
	1878						98	68	22	79
	1881						73	49	19	58
	1883						81	55	16	63
	1885						42	25	21	35
	1888						44	26	11	31
	1892						66	44	18	53
	1895						49	29	20	37
	1897						62	41	22	52
	1899						45	27	20	37
	1901						23	12	18	21
	1903						51	31	18	40
	1906						45	27	23	37
	1908						53	33	16	41
	1911						58	37	12	43

APPENDIX 2.

An explanation of the transmuted score may prove helpful to the reader. It is a score in terms of the standard deviation of variability of the scores of a distribution. The unit of variability is called a standard deviation or sigma. It is necessary to calculate the mean and the standard deviation. Then the following formula is used:

$$T = 50 + \frac{10(X - M)}{\text{Sigma.}},$$

where T is the transmuted score; X means any raw point score of a test; M means the average or mean of the distribution. Sigma, or standard deviation, is the square root of the sum of the squares. By using 50 the average T-score will be 50.

E.G., we shall estimate[1] these measures to be as follows: Mean = 72. Standard Deviation = 16. If we take a raw score of 74 our formula works out thus:

$$T = 50 + \frac{10(X - M)}{\text{Sigma}} = 50 + \frac{10(8)}{16}$$

$$= 50 + \frac{80}{16} = 55^{1}$$

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[1] The measures substituted in this formula are for illustration and do not correspond to the actual measures on which the T-scores in this study are derived.

Reduced to its ultimate significance, the transmuted score simply means that instead of being judged by an arbitrary standard of 50 per cent, the student is judged on the standard of achievement actually existing among his fellow students throughout the Province. It does away with the injustices encountered under the previous system of marking, where the difficulty of the paper varied greatly from year to year.

The following columns show how the T-scores shown in the Distribution Table (Appendix 1) compare with the corresponding raw scores:

RS.	TS.	RS.	TS.	RS.	TS.
35	20	62	41	89	61
36	21	63	42	90	62
37	22	64	42	91	63
38	22	65	43	92	64
39	23	66	44	93	64
40	23	67	45	94	65
41	24	68	45	95	66
42	25	69	46	96	66
43	25	70	47	97	67
44	26	71	48	98	68
45	27	72	48	99	69
46	27	73	49	100	70
47	28	74	50	101	71
48	29	75	51	102	71
49	29	76	52	103	72
50	30	77	52	104	73
51	31	78	53	105	74
52	32	79	54	106	74
53	33	80	55	107	75
54	34	81	56	108	76
55	35	82	56	109	77
56	35	83	57	110	77
57	36	84	58	111	78
58	37	85	58	112	78
59	38	86	59	113	79
60	39	87	60	114	80
61	40	88	61	115	81

Form 252—8,000—1940.

GRADE XII, 1940

Evaluation of English on selected paper.

Cancel marks according to the score card.

											Max. 30
B. Spelling	3	3	3	3	3	3	3	3	3	1	✓
Punctuation					3	3	3	3	3	15 ✓	
Word Usage				3	3	3	3	3	3	3	✓
Grammar				3	3	3	3	3	3	4	✓
Sentence Errors	4	4	4	4	4	4	4	4	4		
Form							2	2	2		
TOTAL DEDUCTIONS										49	✓
TOTAL DEDUCTIONS DIVIDED BY 4 =										12 ✓	
SCORE = 30 minus last total =										18 ✓	

Enter SCORE on English in the block provided on the answer envelope and initial below the entry.

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